

MARYLAND & RARE BOOK ROOM
UNIVERSITY OF MARYLAND LIBRARY
COLLEGE PARK, MD.

LIBRARY—COLLEGE PARK

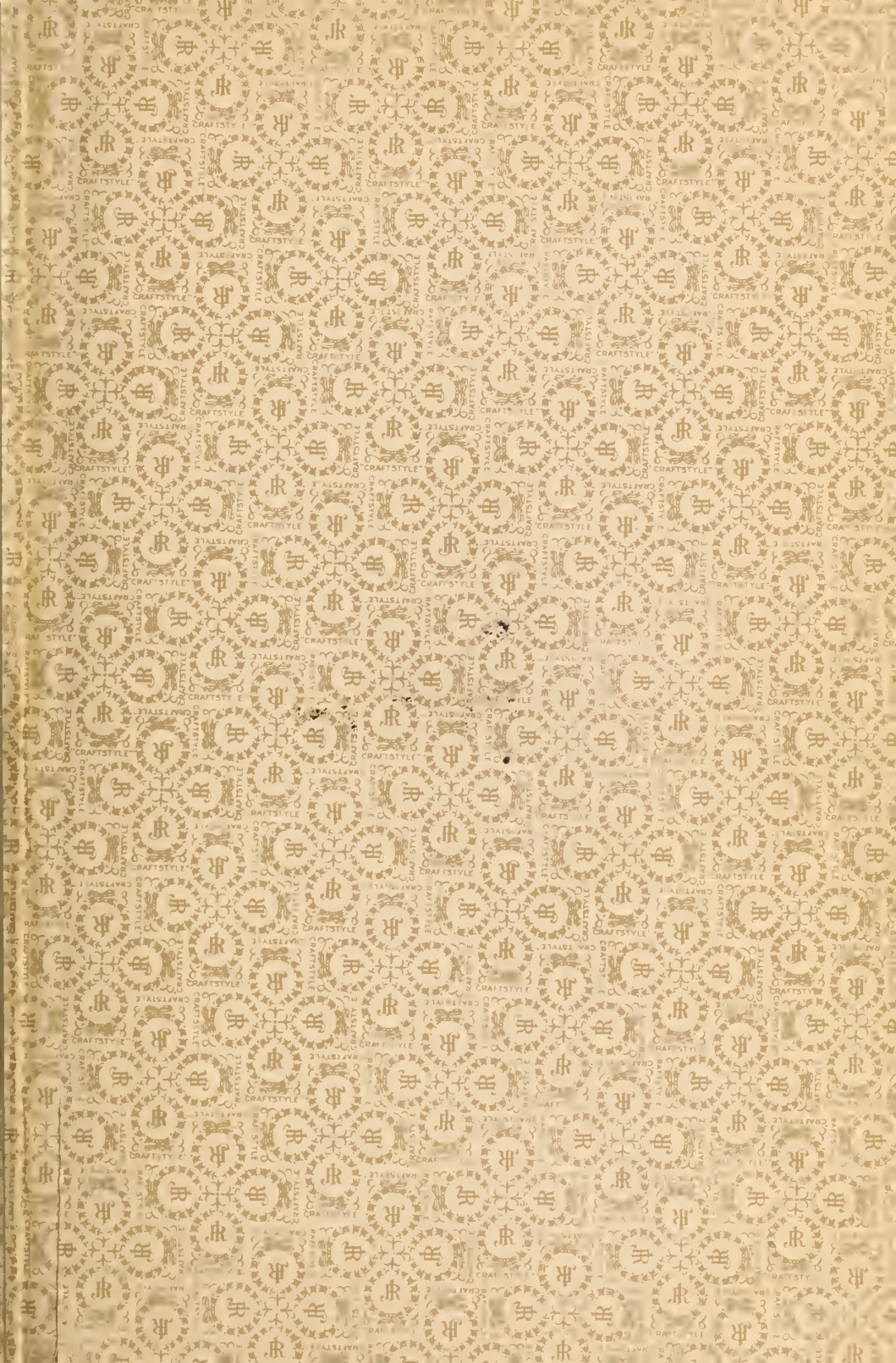


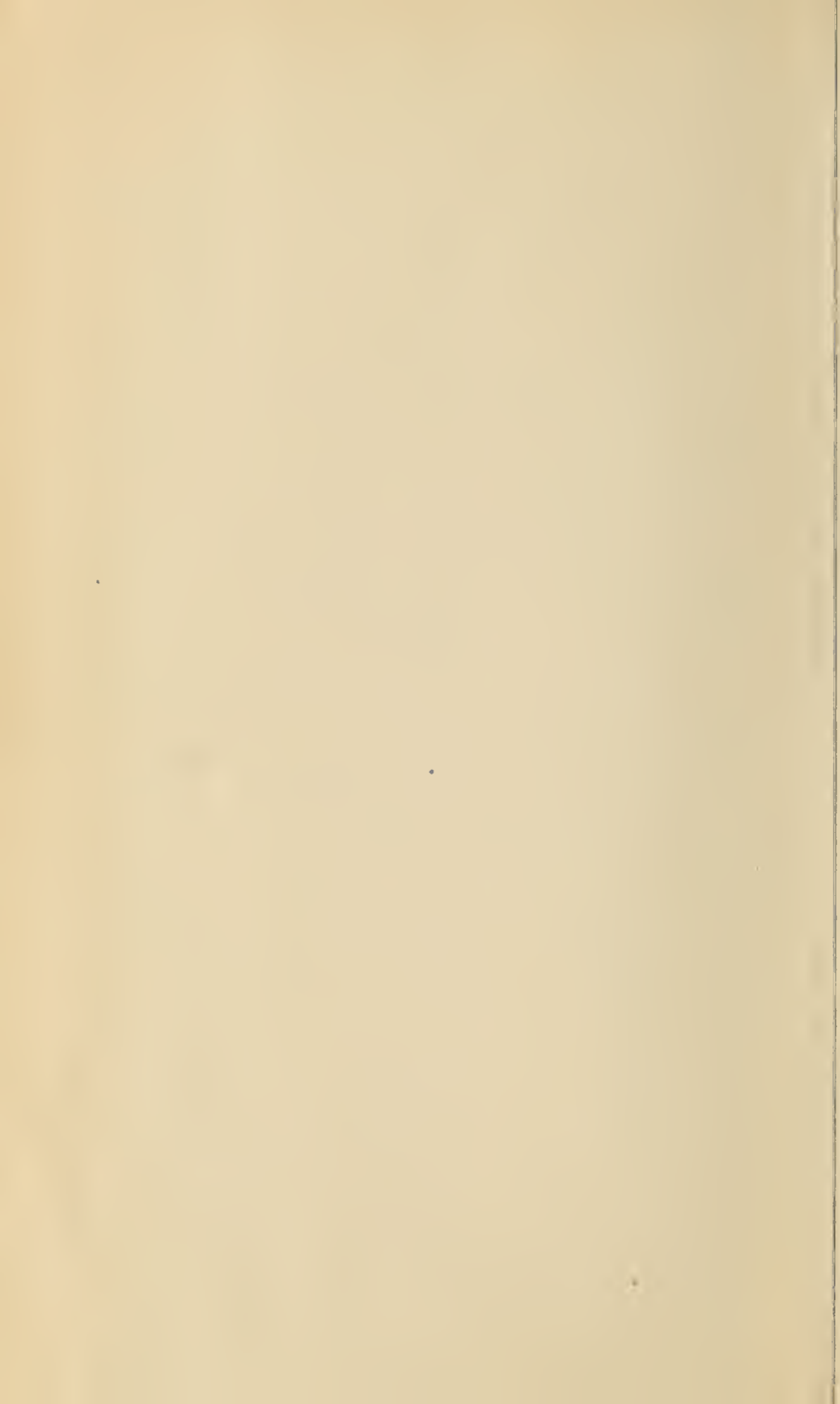
CLASS

BOOK

ACC. No.

NOT CIRCULATE





11743 A36.001



Digitized by the Internet Archive
in 2014

Maryland State Board of Agriculture
AND
Board of Trustees
OF THE
Maryland State College of Agriculture

BI-ENNIAL REPORT

Including a Summary of the Work and Needs of the
AGRICULTURE COLLEGE, EXPERIMENT
STATION
EXTENSION SERVICE
LIVE STOCK SANITARY SECTION
AND OTHER BRANCHES OF WORK UNDER
THE BOARD



BALTIMORE, DECEMBER, 1917.

BOARD OF AGRICULTURE
AND
BOARD OF TRUSTEES.

SAMUEL M. SHOEMAKER, Esq., <i>Chairman</i>	Term expires 1925.
Baltimore County, Md.	
ROBERT CRAIN, Esq.....	Term expires 1924.
Charles County, Md.	
JOHN M. DENNIS, Esq., <i>Treasurer</i>	Term expires 1923.
Baltimore County, Md.	
DR. FRANK J. GOODNOW.....	Term expires 1922.
Baltimore City, Md.	
CARL R. GRAY, Esq.....	Term expires 1921.
Baltimore County, Md.	•
A. W. SISK, Esq.....	Term expires 1920.
Caroline County, Md.	
DR. W. W. SKINNER, <i>Secretary</i>	Term expires 1919.
Montgomery County, Md.	
B. JOHN BLACK, Esq.....	Term expires 1918.
Baltimore County, Md.	
HENRY HOLZAPFEL, Esq.....	Term expires 1917.
Washington County, Md.	

TABLE OF CONTENTS.

LETTER OF TRANSMITTAL.

ORGANIZATION OF THE BOARD.

ORGANIZATION OF THE STATE COLLEGE OF AGRICULTURE.

STATISTICS OF REGISTRATION.

GOVERNMENT AID TO EDUCATION.

OCCUPATIONS OF THE GRADUATES OF THE MARYLAND
STATE COLLEGE.

REPORTS OF DIVISIONS:

LANGUAGE AND LITERATURE;
ENGINEERING;
GENERAL SCIENCE;
PLANT INDUSTRY;
RURAL EDUCATION AND ECONOMICS.

REPORT OF:

EXPERIMENT STATION;
EXTENSION SERVICE;
STATE HORTICULTURAL DEPT.;
FARMERS' INSTITUTES;
EMERGENCY EXTENSION WORK;
EASTERN BRANCH, PRINCESS ANNE;
LIVE STOCK SANITARY SECTION;
SPECIAL HOG CHOLERA WORK;
FARM LABOR BUREAU;
TOBACCO WAREHOUSES.

FINANCIAL REPORT OF:

STATE COLLEGE;
EXPERIMENT STATION;
EXTENSION SERVICE.

NEEDS FOR THE BI-ENNUIUM.

LETTER OF TRANSMITTAL.

Hon. Samuel M. Shoemaker,
Chairman Maryland State Board of Agriculture
and Board of Trustees of the State College.

SIR:—

I have the honor to submit herewith a brief report of the work accomplished since the organization of the Board as provided by the Acts of the General Assembly of Maryland, 1916 Session.

A brief statement is also included, presenting the needs of the various branches of the work for the next bi-ennium.

Respectfully,

ALBERT F. WOODS,
Executive Officer and President.

December 1st, 1917.

Report of the Maryland State Board of Agriculture AND Board of Trustees of the State College.

*From September 30th, 1916, to September 30th, 1917, inclusive,
with approved plans to October, 1918, and estimates
for 1919 and 1920.*

ORGANIZATION.

The General Assembly of Maryland, during the 1916 session, amended and revised the various acts relating to agriculture, live stock, live stock sanitary board, State horticultural, bee keeping, seed inspection, fertilizer and feed inspection, tobacco inspection, State tobacco warehouses, and Maryland Agricultural College, including the Experiment Station and Extension Service. This revision was carried out with a view to making the work more effective and of greater value in developing the agricultural resources of the State. To this end a commission was established under the name of the State Board of Agriculture to consist of nine persons, citizens of the State of Maryland, who shall be appointed by the Governor with the advice and consent of the Senate. The term of each of the nine members shall be nine years and until his successor qualifies. The general powers of the Board, as outlined in the law, are clearly stated in Article 7, as follows:

"The State Board of Agriculture shall investigate the conditions surrounding the breeding, raising and marketing of live stock and the products thereof, and contagious and infectious diseases affecting the same; the raising, distribution and sale of farm, orchard, forest and nursery products, generally, and plant diseases and injurious insects affecting the same; the preparation, manufacture, quality, analysis, inspection, control and distribution of animal and vegetable products, animal feeds, seeds, fertilizers, agricultural lime, agricultural and horticultural chemicals, and biological products; and shall secure information and statistics in relation thereto and publish such information, statistics and the results of such investigations at such times and in such manner as to it shall seem best adapted to the efficient dissemination thereof; and except where

such powers and duties are by law conferred or laid upon other boards, commissions or officials, the State Board of Agriculture shall have general supervision, direction and control of the herein recited matters and generally of all matters in any way affecting or relating to the fostering, protection and development of the agricultural interests of the State, including the encouragement of desirable immigration thereto, with power and authority to issue rules and regulations in respect thereof not in conflict with the Constitution and Laws of the State or the United States, which shall have the force and effect of law, and all violations of which shall be punished as misdemeanors are punished at common law; and where such powers and duties are by law conferred or laid on other governmental agencies the State Board of Agriculture and such other governmental agencies may co-operate in the execution and performance thereof, and when so co-operating each shall be vested with such authority as is now or may hereafter by law be conferred on the other. The powers and duties herein recited shall be in addition to and not in limitation of any power and duties which now are or hereafter may be conferred or laid upon said Board."

In addition to these general powers, special powers and duties are provided in special acts relating to the subjects above referred to—namely, Chapter 372 (Laws of 1916), "An Act to incorporate the Maryland State College of Agriculture * * *"; Chapter 337, relating to live stock; Chapter 285, relating to inspection, State Horticultural Department and agricultural lime; Chapter 373, bees and bee-keeping; Chapter 698, seed inspection; Chapter 309, State tobacco warehouses.

In accordance with the terms of the Act establishing the Board, the Governor appointed the following citizens:

Samuel M. Shoemaker, Esq., Chairman, Baltimore County, Md.,

Term expires 1925;

Robert Crain, Esq., Charles County, Md., Term expires 1924;

John M. Dennis, Esq., Baltimore County, Md., Term expires 1923;

Dr. Frank J. Goodnow, Baltimore City, Md., Term expires 1922;

Carl R. Gray, Esq., Baltimore County, Md., Term expires 1921;

A. W. Sisk, Esq., Caroline County, Md., Term expires 1920;

W. W. Skinner, Esq., Montgomery County, Md., Term expires 1919;

B. John Black, Esq., Baltimore County, Md., Term expires 1918;

Henry Holzapfel, Esq., Washington County, Md., Term expires 1917.

Upon call of the Governor members of the Board met on June 23rd, 1916, and organized. Samuel M. Shoemaker was elected Chairman and John M. Dennis Secretary by unanimous vote; President Patterson, of the Maryland State College of Agriculture, was appointed as temporary Executive Officer and special committees were named to formulate By-Laws and to select and equip suitable offices. In accordance with the reports of these committees at later meetings, offices were established at 816 Fidelity Building, Baltimore, and the following By-Laws were adopted:

BY-LAWS.

1. *Officers.*—The officers of the Board shall consist of a Chairman and a Secretary-Treasurer. They shall be elected by the Board annually at the Meeting in May.

2. *Committees.*—For the purpose of conducting the work of the Board, there shall be five Standing Committees, as follows:

1. Executive.
2. College and Educational Work.
3. Experiment Station and Investigational Work.
4. Extension and Demonstration Work.
5. Inspection and Control Work.

Each Committee, except the Executive Committee, shall consist of a Chairman and two members appointed annually by the Chairman of the Board. The Executive Committee shall consist of the Chairman of each of the several standing Committees. The Chairman of the Board shall be the Chairman of the Executive Committee.

The duties of each Committee shall be in harmony with the policies outlined by the Board, to give general supervision through the Executive Officer of the Board to its especial phase of the work, and to perform such other duties as may be delegated by the Board.

The Executive Committee shall have supervision of the finances of the Board, and shall have general knowledge of the work of the Standing Committees in order to properly correlate the work of the Board, and all expenditures provided by the several Standing Committees shall have the approval of the Executive Committee.

3. *Order of Business*—

1. Roll call.
2. Minutes of previous meeting.
3. Reports of Officers of the Board.
4. Reports of Standing Committees.

5. Reports of Special Committees.
6. Report of Executive Officer.
7. Financial reports.
8. Unfinished business.
9. New business.
10. Adjournment.

4. Stated meetings of the Board shall be held on the second Friday in September, December, March and May; the May meeting, designated the annual meeting, shall be held at the College. The Secretary shall give at least ten days' notice of each meeting in writing to each member of the Board and the Executive Officer. Five members shall constitute a quorum.

5. Special meetings may be called at any time and place by the Chairman of the Board, or by the Secretary, when requested in writing by three members of the Board, provided at least three days' notice is given of said meeting, and provided further, that the object of the special meetings shall be stated in the notices sent to the members. Any meeting may be adjourned to meet at any time and place that the majority present shall decide.

6. The Chairman shall preside at the meetings of the Board, shall call special meetings of the Board or of the Executive Committee, as occasion may require, and shall perform such other duties as may be delegated to him by the Board.

7. At special meetings, after proceedings of the last meeting shall have been read and approved, the Board shall immediately proceed to consider the business for which it was specially convened, and no other business shall be transacted until the said business shall be disposed of; nor shall any other business be considered except by the unanimous consent, and when at least seven members of the Board are present.

8. The Chairman shall decide all questions of order not herein provided for, according to the usual parliamentary rules: from such decisions, however, any member may appeal to the Board. The Board shall decide such appeal without debate, and the decision shall be final.

9. No expenditures shall be made, except in accordance with the appropriations made by the Board.

10. All reports to the Board by the officers in charge of a department, and all communications from employees of the Board, shall be transmitted through the Executive Officer of the Board.

11. It shall require the votes of a majority of the entire Board to amend the foregoing By-Laws.

12. *Duties of the Executive Officer.*—The Chief Executive Officer of the Board and the College shall carry into effect the rules and regulations of the Board of Agriculture, and give

general supervision and direction to the work of the Board in all of its departments. He shall have power to appoint and remove as provided under Section 6, Chapter 372, Laws of 1916, incorporating the State College of Agriculture, the heads of all departments and such other professors, agents, inspectors, assistants, instructors, tutors, officers and other employees as may be necessary to perform the duties of the State Board of Agriculture, as provided in Chapters 391, 337, 309, of the Acts of 1916, and in all other matters which are now or may hereafter be placed under the supervision or control of the State Board of Agriculture or the Trustees of the State College of Agriculture.

He shall define the duties of all the employees and supervise the performance thereof. He shall have control over the buildings, grounds and all the property which is owned, leased or rented by the Board for the use and work of its different departments.

He shall have authority to cause to be erected any buildings or other improvements or alterations in or around the property of the Board or College, as may be directed by the Board.

He shall have authority to require all officers and employees to make reports when desired upon the work assigned them, and upon the condition of the property entrusted to their care.

He shall make a report to the Board of Agriculture at their regular meetings upon the general condition of the work of the Board and the College and all of its departments, and he shall also suggest any alterations and improvements which he may deem desirable to promote the welfare and usefulness of the work of the Board.

At the annual (May) meeting of the Board he shall submit an estimate of the income and expenditures of the Board of Agriculture and the College, and their various departments for the next fiscal year. These estimates are to be considered by the Board in making the annual appropriations.

He shall have power to purchase and to contract for all supplies authorized by the Board, and for which appropriations have been made.

In accordance with the By-Laws the following Committees were appointed by the Chairman:

Executive Committee—

Dr. Frank J. Gooduow, *Chairman*;
Col. A. W. Sisk,
Robert Crain,
John M. Dennis.

College and Educational Work—

Dr. Goodnow, *Chairman*;
 Carl R. Gray,
 W. W. Skinner.

Experiment Station and Investigational Work—

Col. A. W. Sisk,
 Robert Crain,
 W. W. Skinner.

Extension and Demonstration Work—

Robert Crain, *Chairman*;
 Carl R. Gray,
 B. John Black.

Inspection and Control Work—

John M. Dennis, *Chairman*;
 A. W. Sisk,
 Henry Holzapfel, Jr.

In connection with the election of Officers stated, Mr. Shoemaker was elected Chairman and Mr. Dennis Secretary, and later in the year, owing to pressure of other work, Mr. Dennis resigned as Secretary and W. W. Skinner was elected to take his place.

At the meeting of the Board January 30th, 1917, Dr. H. J. Patterson presented a letter requesting the Board to relieve him of the duties of Active Executive Officer and of the duties as President of the College, in order that he might devote his entire time to the duties of Director of the Experiment Station. The Board, after due discussion, decided to act upon Dr. Patterson's suggestion, and desiring to officially recognize the self-sacrificing efforts of Dr. Patterson in the reorganization of the agricultural interests of the State, decided to issue the following statement:

"The Board of Trustees of the Maryland State College of Agriculture have had in their hands for some time the resignation of Dr. Harry J. Patterson as President of that institution. In his letter resigning the presidency, Dr. Patterson made the following statement:

"Four years ago I accepted the presidency of the Maryland Agricultural College at the request of the Board of Trustees, in order to tide over the situation which existed at that time. I did so with the understanding that I was to continue to direct the experiment station and go back to that work at some future time. During this period the College has taken on many new activities; the student enrollment has more

than doubled; the equipment, the faculty and the staff have been increased, and next year the State will give over three times as much for the maintenance of the various College activities as was given in previous years. This condition, I believe, makes this the opportune time for me to ask to be relieved from the College work after July 1st, 1917, and to be allowed to devote all my energies to the Experiment Station, which is my chosen field and the work for which I specially prepared.'

"In accepting Dr. Patterson's resignation, the Board of Trustees of the College expressed a deep sense of obligation to Dr. Patterson—not alone for the loyal and distinguished services which he has rendered the College during his long connection with the institution; but also for working out a program to be carried on in future by the State Board of Agriculture. In the opinion of the Board, this program, if successfully put in operation, will place the State College of Agriculture of Maryland among the great agricultural institutions of the country, and will cause Maryland to take her place as one of the great agricultural States of the Union.

"The Board from the beginning has been in full sympathy with Dr. Patterson in the belief that his greatest service in behalf of the College and the agricultural interests of the State could be rendered as Director of the Experiment Station. The Board further feels that the services which he will render hereafter at the Experiment Station, unhampered by other exacting duties, will be of such character as to focus upon the work which the Maryland State Board of Agriculture hopes to accomplish the attention of agricultural interests throughout the entire country.

"The Board felt, in view of Dr. Patterson's resignation, that they should endeavor to secure as the new President of the College and as Executive Officer of the State Board of Agriculture, the services of the very best man available. They have thoroughly canvassed the situation in the country and have consulted with the United States Secretary of Agriculture and the heads of a number of the leading agricultural colleges."

After due investigation, the Board selected Albert F. Woods, of Minnesota, to succeed Dr. Patterson as Executive Officer and President of the College, term of office to commence July 1st, 1917.

EDUCATIONAL WORK.

(Extracts from the new charter, Ch. 372, Laws 1916.)

"AN ACT to incorporate the Maryland State College of Agriculture for the purpose of maintaining and operating an institution of learning, the leading object of which shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of instruction and learning as are related to agriculture, the mechanic arts and household economics, in order to promote a liberal and practical education, and to prescribe certain duties and responsibilities in connection therewith; to confer upon and grant to said corporation all endowments now granted to the Maryland Agricultural College, and to grant to and impose upon said corporation all powers, duties and obligations now devolving upon the said Maryland Agricultural College, in connection with or by reason of any Public General Law of the State of Maryland; to grant to and impose upon said corporation all powers, duties and obligations devolving upon the said Maryland Agricultural College in connection with or by reason of the various and several Acts of Congress of the United States of America relating to agricultural colleges and agricultural experiment stations, and to name and appoint said corporation to receive all monies, appropriations and grants, now or hereafter coming to the State of Maryland from the United States Government under any Acts of Congress now in force or hereafter to be passed for the purpose above named; and to vest in said corporation all the property of the State of Maryland, real, personal and mixed, now used or operated by or in the possession of the Maryland Agricultural College and the Maryland Agricultural Experiment Station at College Park and elsewhere."

"All departments of said institution shall be open to both sexes for equal educational opportunities. The said Trustees shall maintain in connection with the College an agricultural experiment station, demonstration farms and an extension service, the leading object of which shall be to carry information on rural life subjects to the people of Maryland "

It is further provided that the State Board of Agriculture shall be the Board of Trustees of the College. It is thus possible to bring all of the agricultural agencies of the State and National Government co-operating into the closest harmony, preventing unnecessary duplication and securing the greatest efficiency at the least cost to the State.

ORGANIZATION OF THE COLLEGE.

In accordance with the terms of these acts, President Patterson was instructed by the Board to submit plans for the organization of the College work. The plan was submitted to the Board on June 1st, 1916, with a general report covering the preceding fiscal year and estimates for the year beginning July 1st, 1916. The general policy, based on the new lines, was summarized by Dr. Patterson as follows:

"The general policy pursued under my administration has aimed to carry out the sentiments expressed in the Acts passed by the State Legislature and the United States Congress, which called the institution into existence and provides for its support. This policy may be summarized as follows:

"1. To conduct a college of agriculture and mechanic arts which will prepare men for farming and other industrial pursuits.

"The agricultural courses are planned so as to give a liberal education and afford an opportunity for persons to prepare for any special phase of agriculture that they may desire to follow.

"The mechanical and engineering courses give a good fundamental training in the respective subjects, but also give special emphasis to agricultural and rural problems,

"2. To offer cultural and scientific courses which will enable the children of farmers and the industrial classes to obtain a college education. (This idea was strongly emphasized by Senator Morrill, author of the first and second U. S. Morrill Acts.) The general science courses are specially planned to teach the application of the science to agriculture or some other industry that is closely related to and dependent upon agriculture.

"3. To give such military instruction and training as will develop men physically, promote discipline and prepare men who will be useful to their country in times of emergency.

"4. It has also been the aim, in so far as possible, to permit women to avail of the courses offered for men and also to develop special courses in home making for women. There is probably as much need for women trained in the application of the sciences and arts to the home in the 300,000 Maryland homes as for men trained in agriculture on the 50,000 farms of the State. This obligation is made more imperative by the new charter than by the old.

"5. The U. S. Nelson Act makes it a duty of the College to train teachers of agriculture, mechanic arts and domestic science. This class of trained teachers are needed in our

public schools. It is just as essential for the teachers of these subjects in the high schools to be of college grade as for the grade schools to have teachers of normal training. This requirement is being met at present by the course offered in Agricultural Education, Engineering Education, and the vocational courses offered in the Summer School."

The general plan of organization is shown by the following chart. It will be observed that the general administrative groups report directly to the President. These consist of the accounting department, library, dormitories and dining hall management, general service, director of college work, director of investigation, director of extension, and the director of live stock sanitation.

STATE BOARD OF AGRICULTURE - TRUSTEES

EXECUTIVE OFFICE
PRESIDENTDIRECTOR
INSTRUCTIONDIRECTOR
RESEARCHDIRECTOR
EXTENSIONDIRECTOR
LIVESTOCKS

Accountant

Library

General
Service*Farm Management, Farm Practice, Agricultural Accounting**Agronomy, Botany, Entomology, Floriculture, Forestry, Landscape Gardening, Plant Pathology and Physiology, Pomology, Vegetable Culture**Animal Husbandry, Dairy Husbandry, Poultry Husbandry, Dairy Management, Veterinary Medicine, Animal Pathology and Physiology, Biological Products, Live Stock Sanitation.**Agricultural Economics, Sociology, Political Science, Industrial History, Agricultural Organization.**Agricultural Pedagogy, Summer School, Engineering Pedagogy, Mechanic Arts Pedagogy, Home Economics Pedagogy.**Nutrition, Foods and Cookery, Home Nursing, Home Sanitation, Clothing, Budgets, Home Decorations, etc.**Agricultural Chemistry, Bacteriology, Geology, Fertilizers, Lime and Food Analysis, Canning Industry, Milling Industry.**English, Public Speaking, French, Spanish, German, Literature, Philosophy, General History.**Medical, Athletics.**Rural Engineering, Rural Sanitation, Farm Architecture, Highway Construction, Drainage, Agricultural Machinery, Mechanical Engineering, Civil Engineering, Electrical Engineering, Mathematics, Physics.**Reserve Officers Training Corps,
Band**Inspection and Marketing.*

— Indicates intimate relation.

— Indicates casual relation

..... Indicates no relation

The work is still further organized into divisions, which bring together the related departments: Division of Plant Industry, Division of Animal Industry, Division of General Science, Division of Rural Economics, Division of Engineering, Division of Rural Education and Summer School, and Division of Home Economics. The deans of these divisions are responsible to the directors of the college work for all of the educational work under their supervision; to the director of investigation for all of the experiment station and research projects; to the director of extension for all extension work; and to the director of live stock sanitation for all work in that field.

The various divisions are further subdivided into departments of instruction based on subject-matter. The heads of these departments report to their respective deans.

The various courses offered in the College are similar to those offered in all of the best agricultural colleges of the country. Special emphasis, of course, is laid upon work of special application to this State and to this part of the United States. In general, the courses may be grouped as follows: Agronomy, Animal Husbandry, Horticulture, Biology, Agriculture, Chemistry, Canning General Science, Civil Engineering, Electrical Engineering, Mechanical Engineering, Rural Engineering, Agricultural Education, Engineering Education, two-year courses in Agriculture and Horticulture, Winter Short Courses in Domestic Science and Arts, Winter Short Courses in Agriculture and Horticulture, Winter Short Courses in Farm Mechanics, Winter Short Courses in Road Construction, Summer School Courses, Summer Courses for Rural Ministers, and Country Life Conference. For details of courses, see College catalogue.

The General plans submitted by Dr. Patterson were adopted by the Board subject to such modifications as further study and experience might indicate as advisable.

STATISTICS OF REGISTRATION.

The following table shows the comparative registration for five years. The 1917-18 figures are incomplete, as the report could include only the first term:

	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	*1917-18.
Seniors.	20	17	36	31	31	16
Juniors.	18	37	33	32	37	32
Sophomores. . . .	44	48	42	52	57	32
Freshmen.	48	66	69	97	68	54
Sub.Collegiate. . .	59	51	58	45	22	13
2nd Year Ag. & Hort.	11	20	11	15	14	5
1st Year Ag. & Hort.	31	26	36	26	22	14
Graduate.	13	14	6	8	17	21
Unclassified. . . .	..	8	15	12	7	16
<hr/>						
Total 9 Mos.						
Students.	244	287	306	318	275	203
10 Weeks' Course	132	201	213	181	138	
Summer School. . .	..	..	38	138	188	
<hr/>						
Grand Total, not counting twice	376	488	557	612	591	

*End of first week.

STUDENT ENROLLMENT BY COUNTIES, STATES, ETC.

<i>Counties of Maryland.</i>		<i>States, etc.</i>	
		1915-16. 1916-17.	
Allegany.	7 4	Dist. of Columbia.	56 47
Anne Arundel.	4 5	New York.	9 20
Baltimore.	16 6	Virginia.	8 6
Calvert.	5 2	West Virginia.	2 6
Caroline.	2 1	Pennsylvania.	8 10
Carroll.	3 2	Rhode Island.	1 1
Cecil.	1 ..	North Carolina.	1 ..
Charles.	10 9	South Carolina.	1 1
Dorchester.	1 ..	Massachusetts.	1 2
Frederick.	6 5	Missouri.	1 1
Garrett. . . . .	.. ..	Illinois.	1 1
Harford.	5 4	New Hampshire.	1 ..
Howard.	5 5	New Jersey. . . . .	.. 5
Kent.	3 1	Georgia. . . . .	.. 1
Montgomery.	15 15	Kansas. . . . .	.. 1
Prince George's. . . .	58 47		
Queen Anne's.	5 6	Total Other	
St. Mary's. . . . .	.. ..	States.	90 102
Somerset.	8 9	Philippine Islands.	1 2
Talbot.	5 4	Cuba.	1 1
Washington.	3 5	China. . . . .	.. 1
Wicomico.	3 2	Italy. . . . .	.. 1
Worcester.	8 3	Greece.	2 ..
Baltimore City. . . .	36 33	Panama.	1 ..
Total from		Porto Rico.	1 ..
Maryland.	209 168	Bermuda.	1 ..
		Total outside U. S. . . .	7 5
		GRAND TOTAL.	306 275

The falling off during this year is, of course, due to war service and to the needs of labor in agriculture and the industries.

The experience of all of the great nations engaged in this war, and also of the nations directly and indirectly influenced by it, has demonstrated the great importance of thorough in-

dustrial education of the kind furnished by this and other colleges of agriculture and mechanic arts. This recognition of the value of this kind of work cannot fail to stimulate an increasing interest in these institutions from now on. From now on their growth should be much more rapid. The success of our nation in the world industrial competition that will come after the war will depend upon the thoroughness and extent of this sort of education. We must prepare, therefore, for much larger numbers and increased work from now on.

GOVERNMENT AID TO EDUCATION.

The Congress of the United States has enacted legislation that has been of the greatest aid in developing industrial education, in agriculture, the mechanic arts, and home economics.

The first Morrill or Land Grant Act of 1862 allotted land to each of the States, the proceeds of which were to be used for the endowment, support and maintenance of at least one college where "The leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of instruction and learning as are related to agriculture and the mechanic arts," in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. Under this Act, Maryland received the equivalent of 210,000 acres, the proceeds of which constitute a permanent endowment which the State is required to invest at 5% interest, the proceeds to go to the College. The interest on this endowment amounts to \$5,797 a year.

The second Morrill Act of 1890 appropriated \$25,000 each year for the same educational purposes.

The Nelson Act of 1907 appropriated additional funds to the amount of \$25,000 annually, and provided that the College should offer courses for the special preparation of teachers of agriculture and mechanic arts.

The Smith-Hughes bill recently passed still further provides for the preparation of teachers in agriculture, home economics and the mechanic arts, and in addition provides aid to the secondary schools for the promotion of industrial education. This Act is not yet in operation, but plans are being approved by the National and State authorities. The preparation of teach-

ers in agriculture and home economics should, without doubt, be assigned to the College of Agriculture. There may be some question regarding the preparation of teachers in industrial subjects. The institution is prepared to train teachers in engineering and mechanic arts in case the work is assigned to this institution. The Act will require the enlargement of the teacher training work of the State College and bring it into close cooperation with the State Board of Education, the normal schools, and the high and graded schools of the State.

The Hatch Act or Experiment Station Act of 1887 provided \$15,000 for the organization and support of experiment stations in connection with the colleges.

The Adams Act of 1906 provided an additional \$15,000 for agricultural research.

SALARY AVERAGES.

A study of the salary tables of fifty (50) of the State Colleges and Universities receiving Federal aid under the Morrill Acts gives the following interesting table of average of salaries paid to Deans, Professors, Associate Professors, Instructors and Assistants. The table shows that the Maryland State College averages the minimum or less in every position, except the position of Assistant, where the minimum is \$240.00, while the Maryland is \$540.00 and the average \$905.00. It is impossible therefore while this continues to either obtain or hold the best men to carry on the work required.

	<i>Dean.</i>	<i>Professor.</i>	<i>Associate.</i>	<i>Instructor.</i>	<i>Assistant.</i>
Maximum.	\$8,000	\$8,000	\$3,000	\$2,200	\$2,750
Minimum.	1,800	1,800	1,500	1,000	240
Average.	3,699	3,089	2,088	1,513	905
Maryland State					
Average.	1,800	1,800	1,500	1,200	540

OCCUPATIONS OF THE GRADUATES OF THE MARYLAND STATE COLLEGE OF AGRICULTURE.

(Prepared by Thomas H. Spence.)

Since and including the year 1890, there are living four hundred and fifty-three men who have completed the prescribed course in what is now the Maryland State College. The present occupations of these men cover a wide range of our country's activities. There are only thirty-nine whose present occupations are unknown. The four hundred and fourteen whose vocations are known are shown in the following list:

Actively farming.	88
Commerce and business.	33
Engineering.	75
Education.	45
Chemists.	20
Experts, U. S. Department of Agriculture.	19
Officers, U. S. Army.	23
Medicine.	20
Banking.	15
Law.	22
Volunteers, U. S. Army.	18
County Agent and Extension Service.	12
Officers, U. S. Coast Guard.	4
Experts in State Service.	7
Theology.	5
U. S. Civil Service.	5
U. S. Navy Officer.	1
Journalism.	2
Occupations unknown.	39
	453

We include in this classified list of students whose achievements are well known a number of graduates prior to 1890, and taking these together we find superintendents of the public schools of Baltimore City, distinguished physicians, judges of our State Circuit Courts,* leaders in rural and agricultural work, State chemists, the City Surveyor of Washington, D. C., State foresters, State engineers, a State auditor, a railroad pres-

ident, a Rural Loan Bank commissioner, two members of the State Board of Agriculture, a director of the Postal Savings Bank of the United States,† and men in the national military service from the rank of Colonel down. Our graduates are to be found on the faculty rosters of the national universities, including Cornell and Columbia. They are to be found at the heads of a number of the more important bureaus in the Department of Agriculture, and in the banking world, from Denver to New York, their activities may be recognized. The demand for our graduates to accept special work in the line of teaching and investigation has been such that a certain percentage of them could not find it to their advantage to return to productive farm life. At the same time, it is a matter of gratification that our roster of eighty-eight expert agriculturists does not contain one failure. It is also gratifying to note that in recent years a greater number of our students have made a specialty of agriculture and agricultural chemistry.

*The President of the State Bar Association and his three sons.

†Admiral, United States Navy.

DIVISION OF LANGUAGES AND LITERATURE.

THOMAS H. SPENCE, *Dean.*

While at this time no attempt is being made to offer a distinctive *major course* in Arts and Letters, all the courses in this Division are directed towards making *strong* and *practical* the instruction given. A substantial curriculum of undergraduate courses is offered in such sequence that the student may obtain systematic knowledge in each of the fields of English, French, German and Spanish, and that he may *be* competent and *feel* competent to *promote* and *exemplify* in the press and on the forum the results of his education.

A.—DEPARTMENT OF ENGLISH AND PUBLIC SPEAKING.

ENGLISH.

The work offered in this course begins where the High School English ends. The ultimate purpose of the English course is to train students in clear, easy and forceful self-expression; to make them capable in research work; and to make them efficient in such technical composition and compilation as is necessary for the writing and editing of bulletins.

PUBLIC SPEAKING.

The work in public speaking is similar to that offered by other Agricultural Colleges of the country.

Experience has demonstrated that the large majority of students who have been graduated from this College have, by the very nature of their work, many occasions for making speeches before the public. This is particularly and peculiarly true of those who have been trained in some branch of Agriculture.

The purpose of the course is to train men to stand upon their feet before public audiences and express their thoughts in a clear, logical and forcible manner.

B.—DEPARTMENT OF MODERN LANGUAGES AND LITERATURE.

The work offered here is similar to that of the more advanced Agricultural Colleges, and when certified by this department is accepted at full credit by the larger universities of the country.

The courses in French and German are intended, first, to enable students who expect to engage in investigation to *translate* and to *understand* foreign scientific contributions which have not been rendered into English: second, to foster and to train the mind into accurate and logical methods of reasoning: third, to clarify and simplify technical and applied English, giving the student a more thorough and comprehensive appreciation of his own language.

With the taking over of Porto Rico and the Philippine Islands as the result of the Spanish-American War, and the successful efforts of this country to install North American methods there and in Cuba, a knowledge of the Spanish language became very desirable. The present war has brought the United States into much closer relation than heretofore with the countries of South America. Our engineers and our farm experts have in that continent a new and virgin field for their professional activities. To equip our graduates to enter upon such tasks with maximum efficiency, this department, beginning in 1918, will offer a course in *practical* Spanish, laying the foundations for the spoken and written use of the language.

ENGINEERING DIVISION.

T. H. TALIAFERRO, *Dean.*

The Engineering Group as now constituted includes the Department of Civil, Electrical, and Mechanical Engineering, the Department of Mathematics, the Department of Physics, and, for administrative purposes, the Department of Military Science and Tactics and the Department of Physical Education.

The Engineering Division was organized first for the instruction of students who desire to practice some branch of engineering as a profession and, second, to teach students interested in Agriculture and Applied Science such branches of mechanic arts and engineering as will promote their success in the field of endeavor which they have chosen. It also furnishes practicing road engineers an opportunity to take an intensive course in road building and maintenance, and farmers' sons attending the short courses in Agriculture, instruction in farm machinery, woodwork, the mixing and placing of concrete, etc. It gives information and advice concerning engineering problems relating to drainage, sanitation, farm machinery, etc. Finally, it has had under its supervision the lighting, telephone and clock systems of the College; the laying out of sewer lines, steam lines, etc., and until recently the repairs to buildings and other structures.

The instruction in this Group is based upon the principle that a State Institution is valuable to the Commonwealth only in so far as it meets the needs of the people in the State. Acting upon this principle, courses in engineering are arranged to fit young men to practice their professions after four years of Collegiate training. This is necessary for the reason that very few of our students are financially able to spend a longer period of time in College. The Engineering Faculty is fully cognizant of the fact that further training in engineering and in the so-called cultural subjects is desirable, but, under the conditions stated, it does not deem it advisable to rearrange the degree courses so that a longer period of time would be necessary for their completion. It advises, however, every graduate to take advanced training in some special branch of engineering after he has practiced for a sufficient length of time to determine the branch for which he is best fitted and has accumulated sufficient funds to cover the expense which such advanced work will entail. Excellent opportunities for advanced work are now

available in Engineering at Johns Hopkins University, Baltimore; a number of scholarships are available. A close working arrangement between the two institutes is planned. The State College will lay particular stress on Rural Engineering.

Instruction given students of Agriculture and Applied Science includes courses in mathematics, physics, woodwork drainage, surveying, farm machinery, farm buildings, farm water supply, disposal of sewage, drawing, etc., which will prove of practical value to them later in their careers.

Courses are offered which lead to the degree of Bachelor of Science in Engineering—Civil, Electrical, or Mechanical. These are general in character. No attempt is made to specialize in any particular branch of the main subdivisions, for it is believed that a thorough training in the fundamentals is necessary to anyone who wishes to succeed as a specialist. Degree courses are also offered to students who desire to perfect themselves as teachers of manual arts in high schools and other institutions and to those who wish to practice engineering in rural communities.

As regards teachers of industrial arts it is believed that the development of the teachers' courses authorized under the provisions of the Smith-Hughes Bill should be assigned to this College for many reasons, some of which may be mentioned at this time. It has shops and laboratories equipped for manual training. It has instructors a part of whose time might be assigned to this type of teaching. It affords an opportunity for the collegiate training so necessary to the proper development of teachers for high schools. It enables the student to obtain an education at a moderate cost. It is situated in a healthy community. It is a State institution which should be fostered. Education is for the most part obtained in the lecture room and laboratory or shop, and any deficiency which may possibly result from the College not being located in an industrial center may be readily overcome.

Leaving out of consideration the Military Department and the Athletic Department, the Engineering Group during the past two years has been engaged in the instruction of 79.7 per cent. of the undergraduate students in subjects necessary to their development in their chosen fields of endeavor. The proportion in each class was as follows:

Sub-Freshman and Freshman Classes—100.0 per cent.; two-year classes in Agriculture—100.0 per cent.; Sophomore Class

—48.4 per cent.; Junior Class—55.0 per cent.; and Senior Class—29.0 per cent. Instruction in mechanic arts, farm machinery, etc., has been given to agricultural students in the Winter Short Courses. Lectures have been delivered at the Short Course in Road Building and Maintenance, on Farmers' Day, before Granges and other Societies, and elsewhere. Instructors in this Group have averaged 27 periods of teaching a week in addition to their other College activities.

Since the last report, Mr. H. T. Harrison has retired from the Chair of Mathematics to accept the position of Secretary and Registrar of the College, and Mr. T. H. Taliaferro has been appointed Professor of Mathematics. Colonel John Pitcher has been detailed as Professor of Military Science and Tactics, vice Captain George T. Everett, who was relieved and ordered to his regiment shortly after the declaration of war between the United States and Germany. Mr. W. W. Smelker has been appointed to take charge of the instruction in farm machinery, farm drainage, etc. Assignment to other duties, the declaration of war, and other causes have resulted in changes of personnel which it seems unnecessary to give in detail.

The Division is very much hampered by the lack of funds with which to pay adequately its present force of instructors, to purchase apparatus essential to its proper development, to keep the equipment up to the required standard, and to erect structures in which to keep farm machinery and other apparatus. At present there is a very marked need for a farm machinery building and a hydraulic laboratory. In addition to the funds needed to provide adequate remuneration for the present force of instructors, money should be provided to employ specialists in Highway Engineering, Rural Sanitation and other branches vital to the interests of the people of the State, and particularly the farmers.

In extension work, the Division has, in addition to verbal requests, handled about 100 written requests from farmers and other persons for information, advice, etc., concerning water supply, sewage disposal, drainage, silos, farm bookkeeping, lighting, etc. When for any reason it has been unable to furnish the assistance requested, arrangements have been made with specialists in the National Departments to give it. From time to time articles of interest to the farmers have been furnished to the Extension Service for publication in its news columns.

The Department of Military Science and Tactics has been conducted by Captain George T. Everett in as satisfactory a manner as should have been expected under the handicap of having no armory in which to drill during inclement weather, the severe and prolonged illness of Captain Everett, and the confusion attendant upon the declaration of war. The military efficiency of our graduates and students is evidenced by the large number who have received commissions in the Regular Army, the Marine Corps, the Engineers' Corps, the Sanitary Corps, etc., and as Reserve Officers in the Line. Three notable instances are: Wellstood White, aged 28, who received a commission as Captain of Infantry in the National Army; J. Weldon Green, 23 years of age, who received a commission as Captain of Field Artillery in the National Army, and was appointed instructor in the Second Camp at Fort Myer; and E. B. McKinley, who received a commission as First Lieutenant in the Sanitary Corps at the close of his Junior year. The patriotism of members of the student body is shown in the depletion of our classes which has resulted from their enlistment in the Army, Navy and Marine Corps. Most if not all of our students who were drafted have already been appointed non-commissioned officers in the National Army.

No attempt is made to conduct the Institution as a strictly Military School, but every effort is made to place the military instruction on a high plane. The Military Department has equal rank with the other departments of the College. College credit is given for work in the Military Department, and all students are required to take the course in Military Science and Tactics until the end of the Sophomore year unless physically or otherwise incapacitated. In the Junior and Senior years they are required to attend drill, but not to take the theoretical instruction unless they are enrolled for advanced training as members of the Reserve Officers' Training Corps. Students excused for any reason from the course in Military Science and Tactics are required to take equivalent work in some other department.

An infantry unit of the Senior Division of the Reserve Officers' Training Corps has been recently established at the College. Under its provisions all students, unless excused for physical disability, are required to take the course in military instruction until the end of the Sophomore year. Uniform and equipment are issued to each of these students by the Govern-

ment. Students in the Junior and Senior years who have been selected for further training receive, in addition to uniform and equipment already noted, commutation of subsistence amounting to fifty cents a day, and a summer uniform for the summer camps, which they are required to attend. When they have satisfactorily completed this advanced training they are enrolled, at the discretion of the President of the United States, as Reserve Officers for a period of not less than ten years. The proper development of the course outlined for the Reserve Officers' Training Corps is impossible unless an armory is provided. Therefore, it is not only desirable but imperative that such a building be erected at once.

The Department of Physical Education has been seriously affected by the lack of a gymnasium and a suitable athletic field. Our teams, however, have been most successful in spite of the many drawbacks. This has been due both to their hard work and the able coaching of the Physical Director, Mr. Byrd. An opportunity for physical exercise and development must be afforded, however, to the entire student body as well as the athletic teams. Therefore, it is absolutely necessary that a modern gymnasium with all the necessary apparatus, etc., should be erected, and that an athletic field be constructed. The gymnasium and armory may be placed in the same building if it is carefully designed.

REPORT OF THE DIVISION OF GENERAL SCIENCE.

H. B. McDONNELL, *Dean and State Chemist.*

The work of the Division of General Science naturally falls in two classes, (I) Instruction of Students; and (II) Inspection.

I. Instruction is given in general chemistry, qualitative analysis, quantitative analysis, organic chemistry, agricultural chemistry, agricultural chemical analysis, industrial chemistry, physiological chemistry, mineralogy, and bacteriology. A course in canning, intended as an advanced course for industrial canners, has been outlined, but has not been given. These courses are outlined in the College catalogue and need not be given in detail in this report. Instruction in chemistry now begins with the Freshman year, when a general course, theoretical and practical is given to all students in that class. Only in the advanced chemistry course is the subject continued throughout the entire four years. This prepares the graduate for positions in teaching, research or inspections, in colleges, experiment stations, U. S. and State departments of agriculture, in the laboratories of railroads, paper mills, boards of health, manufacture of dyes, and other industrial plants.

The comparatively new science of bacteriology is closely related to chemistry by causing many of the chemical changes that take place in soils, in dairying, in fermentation and decay, in addition to causing many of the diseases of plants and animals.

We have been giving post-graduate work in chemistry, leading to the degree of "M. S.," to a few students from time to time. We have two such students at present.

The number of students now receiving instruction in chemistry is considerably smaller than we expected, due to war conditions. We now have: Seniors, 17; Juniors, 23; Sophomores, 37; Freshmen, 54; and Post-Graduates, 2; total, 133.

The Freshman Class is divided into two sections, which makes more hours of teaching. The number of hours per week now scheduled for chemistry and bacteriology is 74. This, however, does not include extra hours for meeting students who are making up lost time, preparation for demonstrations, laboratory, etc., and the examination of note books.

The greater part of this scheduled work is being done by Messrs. Broughton, White and Dennis (the latter now leaving for war service), and I wish to commend their work.

II. STATE INSPECTION, OR POLICE WORK.

The inspection work is carried on under three laws covering Fertilizers, Feeds and Agricultural Lime. The work embraces issuing a license for each brand of goods, sampling the goods in the open market several times, analyzing one or more samples of each brand each season, and publishing the results in bulletins.

The license fee for fertilizers is \$10 per brand, with an annual report of the number of tons sold, with a fee of 10 cts. per ton, deducting, however, the license fees. In some cases the tonnage fees do not equal the license fees, in which case there is no rebate, so that the total license is slightly in excess of the 10 cts. per ton. The fertilizer tonnage for this State, which is that used in the State, is as follows, given to even thousands: 1914, 179,000; 1915, 170,000; 1916, 155,000; 1917, estimated, reports not yet in, 170,000. War conditions reduced the fertilizer consumption till this year, when there has been a decided increase in tonnage used. However, the scarcity and high prices of materials has resulted in many more low-grade fertilizers on the market than formerly.

"Concentrated commercial feeding stuffs" pay an annual license of \$20 per brand. They include by-product and proprietary mixed feeds. Approximately 130 brands are licensed annually. The law was enacted in 1900, and should be revised and the license fee reduced to \$15 per brand. A new law should be, substantially, the "Uniform Feeding Stuff Law," as recommended by the Association of Feed Control Officials.

Agricultural Lime is charged an inspection fee of \$15 per brand. It is sampled in much the same way that fertilizer is sampled, but lump lime, which is still the most used form, is difficult to sample properly, and we aim to draw samples only from large lots, either at the point of shipment or delivery.

Nearly all of our samples are drawn by our regular inspectors, who get samples from goods in transit, or at points of delivery, in farmers' barns, etc. Especial attention is given to goods being shipped out of Baltimore, that being the principal distributing point. In slightly over half of the samples drawn the

name and address of the purchaser is secured and he is notified of the result of analysis. Purchasers also have the right to have a sample of fertilizer drawn by a disinterested party and sent in for analysis. All such samples are analyzed when sent according to the requirements of the law. In the case of samples drawn by the inspectors we aim to analyze at least one of each brand of goods and to duplicate, so far as time will permit, the work on other samples when the first fails to be substantially up to the guarantee. In some cases the samples do not come up to the quality claimed, and in many such cases the purchaser often secures a rebate. As this is not done through this office, it is not possible to report the amounts of such rebates. The largest rebate that came to our notice within the year, as a result of our analysis, was for \$600 on one shipment of cotton seed meal, being \$10 per ton for 60 tons. However, we depend more on publicity of results to keep the goods analyzed up to the guarantees.

The main avenue for publicity of the results of inspection is the College "Quarterly" Bulletin. At present 15,000 copies of each number are printed and sent out free of charge to the recipients. Two numbers per year, one for each season's work, contain the results of the analyses of fertilizers, and are of 32 pages each. One number of 16 pages contains the results of the analyses of feeds and one number of from 8 to 16 pages contains the results of the analyses of brands of lime.

The number of samples secured and analyzed by the close of the present year will be, approximately, as follows:

	<i>Samples Taken.</i>	<i>Samples Analyzed.</i>
Fertilizers.	2,300	1,200
Feeds.	450	200
Limes.	150	100
Miscellaneous, not official. . . . .	....	200
	<hr/> 2,900	<hr/> 1,700

It should be remembered that the majority of these samples must be tested for from three to five constituents, and that each determination is made in duplicate, so that 1,700 samples means over 10,000 separate analyses.

The income from inspection fees for several years has been from \$20,000 to \$23,000 per year. This goes into the College treasury and nearly half is absorbed in the "overhead." It is very desirable, especially now when supplies and labor have advanced so much, that a larger sum be allowed for the inspection work.

In the summer of 1914 most supplies from Europe were cut off, and there was a decided jump in the prices of all laboratory supplies, in some cases of over a thousand per cent., but averaging about 100 per cent. Most of our needs are now supplied from domestic sources, but prices remain high. There is also a great scarcity of chemists and, especially in the lower grades, salaries had to be increased. Resignations from the force, especially on State inspection work, have been frequent. The following having occurred within a year:

S. C. Dennis, Assistant Professor Bacteriology and Chemistry;
 John Donnett, Assistant Chemist;
 H. H. Shennick, Assistant Chemist;
 J. D. Bowling, Assistant Chemist;
 L. E. Bobst, Assistant Chemist;
 A. J. Weaver, Assistant Chemist;
 J. S. Brooke, Inspector;
 W. A. Wolfe, Stenographer.

Appointments—

J. Donnett, Assistant Chemist;
 H. H. Shennick, Assistant Chemist;
 A. J. Weaver, Assistant Chemist;
 J. S. Whitby, Inspector;
 E. N. Grimm, Stenographer;
 A. T. O'Neill, Assistant Chemist.

Now Vacant—

Assistant Professor of Bacteriology and Chemistry, and one
 Assistant Chemist.

BUILDING.

The chemistry building is now too small for our present needs, not to mention the growth we expect in the near future. We have but one lecture room and the laboratories are overcrowded, both in the students' laboratories and those devoted to inspection work. We make use of one recitation room in Science Hall and meet some of the smaller classes in laboratories for lectures. The work in bacteriology is done in two laboratories at the Experiment Station. This work is to be moved into the new Agricultural Building, when that is completed. Preliminary plans have been prepared for a new Chemistry Building, and it is to be hoped that these plans may be carried out in the near future.

DIVISION OF PLANT INDUSTRY.

P. W. ZIMMERMAN, *Dean*.

ORGANIZATION.

Previous to September, 1916, the College was organized into departments which worked somewhat independently of each other. This arrangement, however, did not make for the most systematic co-operation, and, in order to correct it, the departments were grouped into divisions according to their interest. Those interested in animal husbandry were grouped into the Division of Animal Industry; those interested in plant life or plant production were grouped into the Division of Plant Industry, and so on for other divisions. Such organization permits co-operation which could not be had under the old arrangement.

The Division of Plant Industry is composed of the following departments:

1. Agronomy—
 - (a) Farm Crops.
 - (b) Soils.
 - (c) Fertilizers.
2. Forestry.
3. Economic Botany—
 - (a) General Botany.
 - (b) Plant Physiology.
 - (c) Plant Pathology.
4. Bacteriology—

(In part in another division.)
5. Economic Zoology—
 - (a) Apiculture (bee culture).
 - (b) General Zoology.
 - (c) Entomology.
6. Horticulture—
 - (a) Vegetable Gardening.
 - (b) Pomology.
 - (c) Floriculture.
 - (d) Landscape Gardening.

Each of these departments has one professor in charge, who says what subjects shall be offered, supervises the teaching and looks after all business of the department. The six departments of the Division are in charge of one dean, whose duties

are to his Division what the duties of the heads are to their departments. He consults with the instructors, holds sectional faculty meetings, supervises to some extent teaching methods, oversees the expenditures of the budgets and organizes the Division as a whole to meet the largest number of interests. It is his business to find out what the plant industry problems of the State are, and then meet these requirements by adjustments in his Division.

COURSES AND SUBJECTS.

About one hundred subjects are taught in the Division of Plant Industry. The number in any particular department depends upon the importance of the kind of work concerned. A four-year college course is offered to those who have been graduated from standard high schools and who want a well rounded education. This course is fitted for men and women who go into the teaching profession, boys' and girls' club work of the State, United States Government work, or who want to carry on farming in a scientific way. Enough of the cultural subjects are offered that students will not feel hampered in any respect after leaving college.

Graduate courses are offered for those who want greater specialization than the four-year course affords.

A two-year agricultural course is offered to students who want to practice farming and have not had sufficient training to get into the four-year course. Many times, however, high school graduates who do not care to go into a four-year course, but want to know something about practical farming methods, take the two-year course.

PERSONNEL.

One important change in personnel occurred within the last year. Professor J. E. Metzger, who filled very admirably the position of Acting Dean of the Division of Plant Industry, resigned to take up work in the Experiment Station of this Institution.

At the present time the personnel of the Division is as follows:

<i>Instructor.</i>	<i>Position.</i>
P. W. Zimmerman.....	Acting Dean, Professor of Plant Industry.
J. B. Wentz.....	Professor of Farm Crops.
O. C. Bruce.....	Professor of Soils.
E. N. Cory.....	Professor of Entomology.
C. J. Pierson.....	Assistant Professor of Zoology.
G. H. Cale.....	Assistant Professor of Bee Culture.
E. F. Stoddard.....	Professor of Vegetable Gardening.
H. Beckenstrater.....	Professor of Pomology.
B. W. Anspou..	Professor of Floriculture and Landscape Gardening.
R. C. Rose.....	Associate Professor of Botany.

VOLUME OF WORK HANDLED IN TEACHING.

The following table shows the number of students handled by the men in the departments of the Division in 1916-1917:

STUDENTS HANDLED DURING THE YEAR.

<i>Instructor.</i>	<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>	<i>Total.</i>
P. W. Zimmerman.....	60	39	81	180
E. N. Cory.	19	7	6	32
C. J. Pierson.	64	57	30	151
G. H. Cale. ....	..	..	13	13
J. B. Wentz.....	42	20	57	119
H. Beckenstrater.	46	35	11	92
B. W. Anspou.	16	44	39	99
O. C. Bruce.	34	45	16	95
E. F. Stoddard.	20	23	47	90

The following table shows the number of hours in the class rooms, either in lecture or laboratory work per week:

HOURS IN THE CLASS ROOM PER WEEK.

<i>Instructor.</i>	<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>	<i>Average.</i>
P. W. Zimmerman.....	26	22	28	25 $\frac{1}{2}$
E. N. Cory.	28	36	29	31
C. J. Pierson.	18	12	16	15 $\frac{1}{2}$
G. H. Cale. ....	..	..	6	..
J. B. Wentz.	22	19	22	21
H. Beckenstrater.	32	42	22	32
B. W. Anspou.	26	36	44	35 $\frac{1}{2}$
O. C. Bruce.	14	16	17	15
E. F. Stoddard.	27	15	33	25

The normal amount of time that the average science instructor should spend in the class room is about fifteen hours. From one to three hours represents the time necessary to prepare for a lecture. Preparation is also necessary for laboratory work. It is evident from the table above that the men were on actual duty in the class room so much of the time that they could not find time for necessary preparation of their work. The quality of the work must have been greatly cheapened.

FIELD AND EXTENSION WORK.

Aside from their heavy schedules, many of the men spent some time at extension work. The Professor of Farm Crops spent his entire month of vacation in the field demonstrating the formaldehyde treatment of wheat for smut and instructing on the best types of wheat for the State. He also spent several days in the capacity of judge at fairs.

The Professor of Landscape and Floriculture spent two days a week for four months supervising garden work in the State. He made many trips to help lay out grounds, both private and public. So far he has been unable to satisfy all requests that came for expert advice.

The Professor of Pomology took ten trips to individual orchards, independent of the Extension Service. In connection with Extension he spent several days giving demonstrations and several days judging at county fairs.

Professor Bruce, of the Soils Department, worked with the United States Department of Agriculture during the months of June, July, August and September, making soil surveys of the State of Maryland.

The head of the Department of Vegetable Gardening has given lectures to associations and assisted market gardeners throughout the year. He has acted as judge at a number of fairs, and has had a large correspondence in which he answered numerous questions relative to gardening. One of the best things he did was to take inspection trips to the vegetable growing districts. Students accompanied him on the trips.

LABORATORIES AND EQUIPMENT.

Visitors who come here from other institutions always express surprise at our small, dark, poorly furnished, poorly equipped laboratories and lecture rooms. This sadly existing

condition is one of the first things that should be looked after. Students do not like to work with inferior tools and in a poor place. There is something in the spirit of work which counts for much in a student's welfare. With the proper attitude, a student does a thing well and likes it; without such spirit, he does everything poorly. The remedy for this situation is more, and up-to-date, equipment placed in large, light laboratories. Fortunately, the new building will take care, in part, of the laboratory question, but we need another new building of about the same size. With room and equipment, we can gain dignity as a College, but we cannot advance without them.

SALARIES.

Another condition which lowers the dignity of the institution is the low salaries paid to instructors. Some are receiving compensations which are almost below the living expenses of careful people. There is a certain standard of living below which a college professor dare not fall. He never can hope to accumulate any amount of money. His pleasure in life comes from doing his work well, so let him have enough money to live without wondering where to get the next dollar.

Another point to be mentioned is the fact that the best men of the country will not come here for the present salaries, or if a good one does come, he generally finds a better place in a year or two.

RECOMMENDATIONS.

1. A new salary scale should be inaugurated for this Division. It is suggested that this scheme be made sufficiently flexible to insure protection to the College and at the same time work justice with the individuals. The range of salaries should be approximately as follows:

(a) Dean.	\$3,000 to \$4,000
(b) Professorship.	2,000 to 3,000
(c) Associate Professorship.	1,500 to 2,000
(d) Assistant Professorship.	1,500 to 2,000
(e) Instructor.	1,200 to 1,800
(f) Assistant.	800 to 1,200

Conferences on individual cases will be gladly welcomed.

2. At the present time instructors are allowed one month for vacation, but in many cases the nature of the work is such that no vacation can be had. It is recommended that every faculty employee of the College be given three months on full pay every year, and asked to use the time for personal improvement. No one thing would do more for the institution than to send out men to the other institutions for a quarter of a year and let them come back ready to install new and good traditions.

RURAL EDUCATION AND ECONOMICS.

HAROLD F. COTTERMAN, *Dean.*

Rural Education and Economics were temporarily grouped for administrative purposes near the close of the past year, and now consists of the following general groupings: Rural Education, Rural Economics, and Rural Community Study. Specifically, under Rural Education falls the following: Agricultural Education, Home Economics Education, Engineering Education, Summer School, Practice Teaching, and the Agricultural High School; under Rural Economics: Economics, Rural Economics, Farm Management, Markets and Marketing, Agricultural Statistics, Agricultural Organization, Industrial History, and Rural Economics Survey; and under Rural Community Study: those subjects apropos to both Rural Education and Rural Economics, viz, Elements of Community Study, Community Organization, Community Survey, Government, and School for Rural Community Workers, Ministers, etc.

The following changes have been made in the Division Faculty: J. E. Metzger, formerly Professor of Agricultural Education and in charge of the Agricultural Education Department, resigned this position to accept one as Station Agronomist, and Harold F. Cotterman was employed to succeed him as Professor of Agricultural Education; F. B. Bomberger, formerly Dean of the Division of Rural Economics and Professor of Political Science, Economics, and History, resigned this position to accept the position as Assistant Director of the Extension Service.

In the reorganization which followed, resulting in the present Division of Rural Education and Economics, Harold F. Cotterman was made Dean of this Division. P. F. Brookins was employed as Assistant Professor of Rural Economics, Louis F. Ortmeyer was made responsible for the industrial history, G. J. Schulz for the government and Sub-Freshman history, and W. T. L. Taliaferro for the farm management.

In the past, all students have been required to take the work in economics, history, government, and business law. All of the students in the agricultural courses, such as agricultural education, agronomy, animal husbandry, horticulture, etc., have been required to take farm management and psychology, and

the students in the agricultural education course the educational subjects in addition to those already mentioned.

It is necessary for the Division to provide separate sections for all of its offerings to the two-year students. The units of this Division have also contributed their share of instructors to the Summer Schools, the Professor of Agricultural Education being the director of the work and responsible for its proper organization.

In the 1916 Summer School there was enrolled a total of 196 students, and in the 1917 Summer School a total of 153 students. The bulk of the latter number were teachers from the rural schools of the State, the regular college credit enrollment being slightly decreased. The attendance at the Ministers' School was slightly less than the previous year.

The foregoing, together with the elections in rural economics and the thesis work in agricultural education, has constituted the normal instructional load of the units now organized under this Division.

In the past, considerable demand has been made on the Department of Rural Education for extension work in education. In 1916, a total of three and one-half weeks was spent in teachers' institute work in addition to the numerous engagements during the scholastic year. In 1917, a total of four weeks has been spent in institute work in various parts of the State. Conflicting calls for this work were registered from different sections. There has been in addition the usual call for high school commencement and teachers' meeting addresses.

The extension work carried on through correspondence may be gauged by the 1916 records. More than two thousand regular and form letters were sent out from the office in the interests of education.

The Department of Rural Education has continued the distribution of the publication known as "Elementary Vocational Agriculture for Maryland Schools." Fifteen of the twenty-three counties of the State now use this publication in connection with their school work.

The Professor of Agricultural Education has been acting as Inspector of the Agricultural High Schools of the State in co-operation with the State Board of Education. This, while calling rather heavily on the time of the agricultural education instructor, has been considered an advantage, as it has put the

instructor in touch with the current progress of the State in this field.

Up until the time of the addition of the specialist in rural organization to the extension staff, there was a heavy call on the Rural Economics unit for extension service in rural community organization. Now, as the Extension Division has this specialist, many calls on this Division for such services are not anticipated. However, the Division holds itself in readiness for such work should an emergency call come to it.

If this Division is to make the growth that should be expected of it, it must have the funds to make the necessary additions to its faculty and to organize the laboratories imperative to the successful carrying on of its work.

Laboratories in agricultural education are not so easy to construct or equip for the reason that the materials of equipment and instruction are not so simple as grams of chemical compounds or preserved zoological or botanical specimens, but consist, on the other hand, of very complex materials, such as groups of individuals, usually between the ages of 14 and 18, engaged in purposive study which the student in education must learn to guide efficiently so that the waste in education will be eliminated and the State receive a maximum return for every dollar invested in agricultural instruction in its schools.

The subcollegiate work of the College of Agriculture is now being organized as an agricultural high school to be used for teacher training purposes. This will provide for the major portion of the necessary laboratory work in agricultural and home economics education. In addition to practice work in this high school, students in education should be required to make observations in the best high schools in the State. Both the work of the agricultural high school and the observation school will require funds for instruction and maintenance. The educational laws of the State of Maryland make such work imperative. The Smith-Hughes law will bring to this Division new obligations and the equipment described will be necessary to meet its demands.

Laboratory work in community study and certain phases of rural economics is still more difficult to organize and equip. It is practically impossible to organize such laboratories on the campus of any College, but much more expedient to transport the student to the laboratories, viz, the rural communities of the State. The students of the College maintain a College Grange

and certain other organizations, but these could not be used for laboratory purposes because they are organized to meet students' needs and are typical of no other community in the State. Certain advanced students might be utilized to help the College gather community data of which the College and other community workers of the State are so much in need, but the usefulness of such students in these projects is doubtful unless they first have had the elementary practice courses in community survey, and if they proved useful in such work, it would not meet the needs of the majority of students who expect to return to their communities as leaders. Facilities, therefore, should be provided for the elementary practice courses in community survey.

The present Faculty of the Division could probably handle the instruction necessitated by this work providing the necessary funds for its maintenance were available.

The farm management unit is in great need of equipment and data for the proper carrying on of its work. In the new building, it will have space for a suitable laboratory, but its work is hampered by a lack of reliable data covering the status of the farm incomes and farm management conditions of the several counties of the State. For the present it must content itself with an examination of the findings of other States whose needs and conditions are totally different from our own. This is an injustice to the agriculture of Maryland. First of all should the graduates of her Agricultural College be furnished a fund of data striking at the heart of her management problems.

The Rural Economics unit is in a similar predicament. To provide these two units with the data necessary for the proper carrying on of their work, funds should be available for the employment of a full-time field survey man and his maintenance. His functions would be two: (1) to collect the needed data, and (2) to make farm management demonstrations to the students of the College and to the farmers of the communities in which he worked.

The foregoing, it is felt, covers the salient features of work of the Division for the past two years and indicates the problems which demand its immediate attention.

EXPERIMENT STATION.

H. J. PATTERSON, *Director.*

The details of the work of the Experiment Station and the expenditures for this department of the Institution will be found in the Thirtieth Annual Report of the Station.

The work in progress may be summarized under the following heads:

1. A study of methods for increasing and maintaining the productive capacity of the principal types of soil in Maryland.
2. A study of the fertilizer requirements of different crops on different kinds of soil.
3. The improving of fruits, vegetables and crops for different sections of the State by selection and breeding.
4. The testing of new crops and varieties for different sections.
5. The introduction into some sections of the State of new crops and systems of cultivation and rotation of crops.
6. The development of disease resistant strains and varieties of fruits, vegetables and crops.
7. A study of methods of insect control.
8. A study of methods for the control of plant and animal disease.
9. A study of the conditions prevailing in plants during dormancy and the relation of this period to the future development of plants, also the relation of these conditions to the storage of crops.
10. A study of the conditions and factors which influence the food value of milk.
11. Testing methods for feeding and culture of flowers.
12. A study of the relation of feeding, temperature and moisture to variations and mutations in plants.
13. Testing methods for the preparation of biological products for use in protecting animals against diseases.
14. A study of the relation of feeds to the quantity and quality of animal products.
15. A study of the relation of methods of curing meat to quality.
16. A study of the life history of insects.
17. A study of irrigation for humid climates.
18. A study of the relation of organic matter to the bacteria content of soils and of their mutual relation to the productive capacity of the soil.
19. A study of the use of bees for the pollination of greenhouse crops.
20. A study of methods for wintering bees in Maryland.

FUTURE REQUIREMENTS.

The Experiment Station now receives \$30,000 per year from the U. S. Congress. The Legislature of 1916 appropriated \$25,000 for 1917 and a like amount for 1918 for general maintenance and investigational work; also \$5,000 each year for the work at the Ridgely Sub-Station.

The increased cost of supplies, labor and salaries will make it necessary to have these amounts increased by \$10,000 per year in order to continue the work now in progress.

The investigations on the prominent types of soil in the State could be extended with much profit if the money was available. There is a demand for work of this kind in many parts of the State, but so far it has been thought best not to undertake more than the funds provided would insure being carried on for a period of at least five years. To do the work demanded so as to have work on most of the soil types would necessitate at least \$5,000 more per year.

BIOLOGICAL LABORATORY.

The work of the Biological Laboratory has been confined to the manufacture of the anti-hog cholera serum and furnishing serum to the Extension Service and Live Stock Sanitary Board for use in the campaign of education in the control of hog cholera which they have been conducting during the past year.

The cost of serum to the farmers has been reduced during the past year from 1.8 cents to 1.25 cents per c. c. The manufacturing of hog cholera serum on a larger scale and a decrease in the cost of hogs would enable the laboratory to produce serum at a less cost.

Some improvements in the methods of making serum have been made which requires the use of smaller quantities. This has also been to the advantage of the farmer by lessening the cost of treatment.

If the State provides the plant and the technical skill necessary in making the serum, the farmer should be willing to pay the other expenses connected with the cost of manufacturing the serum.

The Biological Laboratory should be equipped so as to do the work required in the diagnosis of many diseases among domestic animals. The time is also at hand when the work of the

laboratory should be extended so as to prepare other biological products required for use in treating domestic animals.

SEED INSPECTION.

During the past fiscal year the Seed Inspector visited 456 seed dealers in the State and inspected agricultural seeds which they had exposed for sale. As a result of these inspections 1,382 official samples were procured and brought to the laboratory for analysis. Besides the official samples, there were sent into the laboratory by farmers for examination 700 samples. Most of the samples were tested for both purity and germination.

Most of the seed dealers seem to realize that the law is beneficial to both the seller and buyer, and are co-operating in carrying out its provisions.

There is a demand for extending the provisions of the law so as to include the vegetable seeds used by market garden farmers.

REPORT OF THE EXTENSION SERVICE.

THOMAS B. SYMONS, *Director*.

(A full report of this work is issued separately, but a general summary is presented here.)

Never in the history of this country has the Agricultural Industry been given the place it so rightfully deserves until the opening of the past season, when the nation realized its dependence upon the American farmer for an adequate production of food products.

As a result of this awakening, every force was brought to bear upon aiding in the encouragement of greater production and more extended cultivation of farm crops and the raising of live stock to meet the increasing demands of the war.

The leadership of the State Colleges of Agriculture was at once recognized to guide the efforts of all forces thrust into the arena for increasing our agricultural output, and the Extension Divisions were the natural agencies of the Colleges through which the greater part of these efforts were carried to the farmers of the country.

The Extension Service of this Institution was no exception, and we were fortunate in having an organization in all counties of the State, in co-operation with the U. S. Department of Agriculture, to carry out as successfully as possible, all plans for meeting the national emergency.

It is believed that all forces in the Service arose to the occasion, and as a result we can feel justly satisfied that, within our means, every effort has been made to extend our influence and increase our efficiency in promoting all phases of production and conservation of agricultural products by extension and demonstration methods. The farmers of the State have responded enthusiastically to the call of the nation and spent every effort during the past season to increase the output of their farms.

The work of the Service can best be discussed under the general divisions of the work and approved projects.

ADMINISTRATION.

The enlargement of the work of the Service during the past year has greatly increased the administrative duties. The na-

ture of the work makes necessary an extended organization to meet the conditions in all parts of the State. The fact that Extension forces must come in contact with so many people under various conditions increases the possibilities for administrative difficulties. Representatives of the Service must not only be capable and efficient, but must also serve agreeably and satisfactorily, the constituencies of the several counties.

Relations with all divisions of the Institution have been most agreeable, and it is through the co-operation extended by all forces that the work of the Service has been so successful.

The transfer of the administration of the Farmers' Institute work under this Service, beginning this Fall, will greatly aid in the co-ordination of the work of the State. The relations with the U. S. Department of Agriculture in the conduct of co-operative work have been agreeable and a much better understanding between all forces in the prosecution of Extension activities has been effected.

The completion of the reorganization plans will stabilize the work and insure greater efficiency in the future.

SOURCE OF EXTENSION REVENUE.

During the fiscal year ending June 30th, 1917, there has been available \$24,202.34 from Federal Smith-Lever funds, \$14,202.34 from State Smith-Lever funds, \$20,400 from U. S. Department of Agriculture, \$23,000 from the County Demonstration fund, \$5,000 from the State fund for General Extension and Executive work, and about \$2,000 from the State Horticultural fund, or a total of \$88,804.68, that was devoted to Extension and Demonstration work.

During the present fiscal year ending June 30th, 1918, there is available \$30,657.95 from Federal Smith-Lever, \$20,657.95 from State Smith-Lever, \$20,380 from U. S. Department of Agriculture, \$23,000 from the County Demonstration fund, \$5,000 from the State fund for General Extension and Executive work, about \$2,000 from the State Horticultural fund, and \$6,000 for Farmers' Institute fund, or a total of \$107,695.90 that is being devoted to Extension and Demonstration work in the State.

In addition to the above, there is approximately \$7,000 that is contributed by counties and other sources for aiding in the efficiency of County Agent work in the respective counties.

A detailed statement of expenditures and allotments of these funds will be appended to this report.

The State appropriation of \$1,000 to each county which has been available during the past year has been of inestimable value to the State, as it permitted the inauguration of County Agent work in all the counties of Maryland. It is hoped that a similar provision will be made for Home Demonstration Agents in all the counties.

OFFICE ACCOMMODATIONS, EQUIPMENT, WORK, ETC.

During the past year, the Extension Service has been located in a leased building about a mile from the College and close to the railroad station. This permitted bringing all specialists together and the centralization of clerical and office force which has greatly increased the efficiency of the Service. While much new equipment has been secured, including office furniture, slides, etc., yet there is much that is needed by the Specialists and Agents. In fact, we have been able to procure practically no demonstration equipment for the Agents, and only a limited amount of office supplies. The Agents should be supplied with soil augers, testers, sprayers, etc., that would facilitate their work with the farmers.

Added equipment in the clerical office, such as typewriters, new mimeograph, additional apparatus for the multigraph, etc., has greatly facilitated the handling of the enormous amount of mail and circular matter that has been mailed from the office.

In this connection, it may be added, it has been difficult to keep stenographic help. Owing to the great demand for clerical assistance by the Government, it has become necessary to increase salaries for this work, in order to keep a satisfactory force.

Miss A. E. McCarthy, the chief clerk, submits the following data which gives some idea of the amount of clerical work conducted in the office:

Amount of paper used (Oct. 1st, 1916, to Oct. 27th, 1917), multigraph, mimeograph, etc.....	588,000
Number stencils used for above period.....	1,140
Number circular letters issued.....	93
Mail distributed, Oct. 1st, 1916, to Oct. 1st, 1917—	
- First-class letters.	52,126
Mailed packages (bulletins, seeds, supplies, etc.)....	6,434
Postal cards.	26,793
Miscellaneous bulletins.	27,000
Miscellaneous publications.	25,000
Dictated letters, average per day.....	166

We are particularly glad that accommodations can be made for the Service in the new Agricultural Building, as it will bring our work in closer touch with the other divisions of the College.

CHANGES IN PERSONNEL.

There have been several changes in the personnel of the Extension Service during the past year:

Mr. G. H. Alford, State Agent, resigned March 1st, 1917, to accept a position with the U. S. Department of Agriculture; Miss Katherine Pritchett, Home Demonstration Agent, severed her connection with the Service June 30th, 1917; Mr. W. B. Kemp, Specialist in Agronomy, resigned September 15th, 1917, to take up other work; Mr. F. B. Bomberger was appointed Assistant Director and Specialist in Rural Organization and Marketing, effective June 1st, 1917; Miss Venia M. Kellar, Assistant in Home Economics work, was appointed Acting Home Demonstration Agent, effective July 1st, and later appointed State Agent; Mr. Reuben Brigham, Boys' Club Agent, resigned June 30th, 1917, to accept a position with the State's Relations Service; Mr. Ralph McHenry was appointed Acting Boys' Club Agent July 1st, 1917; Mr. H. W. Riekey was appointed Specialist in Poultry Husbandry, effective September 1st, 1917; Mr. George F. Jordan was appointed Assistant in Publicity July 15th, 1917.

There have been few changes in the County Agents. Five new Agents were appointed at the beginning of the season, as follows: J. L. Fidler, A. G. Middleton, P. A. Hauver, T. L. Smith and C. H. Taylor.

R. L. Clute has been succeeded by J. P. Burdette in Charles county; E. O. Anderson succeeded A. J. Norman in Caroline county. Mr. Norman was killed accidentally by a live electric wire which had been blown down by a terrific storm. Mr. Norman was a very efficient Agent and the Service mourns his untimely end. County Agent A. G. Middleton was drafted into the National Army October 1st, 1917, but has recently been exempted from service and returned to his official duties.

A number of Women Agents were appointed regular and emergency workers during the Summer months. These included: Mrs. Susan F. Ward, Misses Adice S. Jones, Mildred Brady, Alma Merwin, Louise Holbrook, Elva Akin, Rhea Morgan, Annie L. Copper, Hettie I. Newman, Helen Erickson,

Edna Marshall, Pearl Bernhardt, and the following colored women: Eslanda Smith, Bessie Murdock and Mrs. J. W. Shaw.

Miss Alice C. Walton and Miss Grace E. Reeves have been associated with the Service temporarily at headquarters. Recently, Miss Gertrude Erickson has been appointed Assistant at headquarters, and Miss Walton transferred to Baltimore City.

Mr. J. F. Armstrong (colored) has been engaged during the past Summer to work in the Southern Maryland counties. Additional colored Agents will be appointed this Winter.

While the administrative work has been exceptionally heavy during the past year, owing to the growth of the Service and emergency work, yet with the splendid co-operation of all forces in the Service as now organized, the difficulties of administration have been minimum considering the field of activity.

The writer has attended 58 meetings, made 26 addresses with an attendance of 14,480.

The Assistant Director, Mr. Bomberger, has greatly aided in general administrative work and supervision of Agents since his appointment, June 1st.

PUBLICATIONS.

Limited funds have prevented the issuing of as many bulletins as we would desire. Four regular bulletins, "The Garden," "Federal Farm Loan Act and the Farmer," "Garden Record Book," "Spray Calendar" and "What Maryland's Farmer Boys and Girls Can do to Help the Nation This Summer," with a total of 54,000 copies, have been issued by the Service. The "Farm Adviser," a bimonthly publication, was issued from July 1st to December 1st, with a total of 30,000 copies. This has been superseded by "Extension Notes," issued monthly to give timely advice to farmers. A total of 25,000 copies of this publication have been distributed.

A special weekly press copy service for the press of the State has just been inaugurated. One column of plate matter has been furnished weekly to the press of the State accepting same. It is expected to discontinue the plate-matter service, using the copy service in its place.

Twenty-one circulars giving instructions upon various crop insect pests, etc., have been issued, with a total of about 25,000 copies. In addition, a large amount of bulletins, circulars and

posters from the U. S. Department of Agriculture and the College and Station have been distributed through this office.

Special equipment for mailing matter has been installed to facilitate the work in the office. The publicity work is being more thoroughly organized.

COUNTY DEMONSTRATION WORK.

This project provides for carrying out all demonstration work through men County Agents. As stated previously, we were fortunate in being able to have an agent in every County during the past season. It is believed, on the whole, that we have an unusually strong force of Agents. They have done splendid work during this pressing season. Much additional work has been thrust upon them. In several counties where the work at first was not received enthusiastically by a large number of farmers, the sentiment has completely changed and every encouragement is given the Agents.

It is most difficult to secure men with training, experience and, at the same time, the other qualities that enable them to fit into the varying conditions presented in many of our counties. The County Agent's position under any circumstance is a difficult position to fill.

Regular demonstration work has been conducted in all counties, but the emergency work in seed distribution, securing of farm labor and other important emergency matters forced the Agents to change or rather curtail their regular work.

Full reports for the year's work from the Agents, giving number of demonstrations in different crops, live stock, etc., will not be available until the end of the season. The following data is taken from the weekly reports submitted by the County Agents from January 1st to October 1st:

Number of consultations at home or office.....	16,393
Number of circular letters sent out.....	30,403
Number of demonstrators visited.....	3,825
Number of visits to farmers and others not included in the above.	6,310
Number of meetings held or attended.	3,825
Number of letters written.....	23,224
Number of bulletins sent out.....	12,248
Number of club members visited.....	2,557
Number of schools or clubs visited.....	849
Estimated attendance at meetings.....	128,533
Number of miles traveled by rail, auto and team.....	153,180

Through the co-operation of the State Council of Defense, the work of the Agents has been greatly facilitated by furnishing clerical help and some travel expense. It is hoped that permanent arrangements can be made to place the Agents upon a travel expense account for which they can be reimbursed each month. At the present time, the Agents must pay their travel expenses, furnish supplies, auto, etc., out of their salary. At least \$500 should be allowed for travel expenses. It goes without saying that clerical assistance is most necessary, to enable an Agent to do efficient work.

Space will not permit discussing the work of each Agent by counties. The work of some of our Agents would be a model for the country.

The past season has demonstrated more and more the possibilities of County Agent work and its effectiveness in aiding the farmer in his problems when guided by a trained, earnest and effective worker.

The following County Agents are at work in the respective counties of the State:

E. O. Anderson, Caroline County; L. L. Burrell, Kent Co.; J. P. Burdette, Charles Co.; J. H. Drury, Calvert Co.; J. L. Fidler, Howard Co.; P. A. Hauver, Frederick Co.; J. F. Hudson, Baltimore Co.; O. C. Jones, Queen Anne's Co.; D. H. Kauffman, Cecil Co.; C. Z. Kellar, Somerset Co.; Grover Kinzy, Carroll Co.; John McGill, Jr., Allegany Co.; T. E. McLaughlin, Harford Co.; A. G. Middleton, Garrett Co.; J. F. Monroe, Worcester Co.; G. B. Porter, Dorchester Co.; T. L. Smith, Washington Co.; C. H. Taylor, Prince George's Co.; W. C. Vail, Wicomico Co.; F. J. Van Hoesen, Montgomery Co.; E. P. Walls, Talbot Co.; G. F. Wathen, Jr., St. Mary's Co.; H. C. Whiteford, Anne Arundel Co.; L. H. Martin (colored), Local Agent, Princess Anne, Md.

HOME DEMONSTRATION AND GIRLS' CLUB WORK.

With the approach of Spring, only seven women Agents were employed in the State. It has been difficult to have county authorities recognize the importance and provide part of the funds for this work.

The national demand for the greater production and conservation of foods and the organization of women in the State and counties, placed a great burden upon this branch of the Serv-

ice. Immediate steps were taken to meet the emergency, and while the appropriation from the U. S. Government for this emergency work was not available until August 14th, by the first of July, Miss Venia M. Kellar, State Agent, organized the work, and had an Agent at work in 22 of the 23 counties and also in Baltimore City, Cumberland and Hagerstown. These Agents worked in co-operation with the Women's County Defense Councils. In many cases, the Agents carried out the work of conducting demonstrations in canning, preserving and drying, planned by these committees in the counties. All forces worked together for results, and there is no doubt that never in the history of our State has so much foodstuff been canned, preserved, etc., for winter use. Complete reports from the Agents are not as yet available, but Miss Kellar submits the following summary of activities as taken from the weekly reports of the Agents submitted during the season:

	<i>Regular Agents.</i>	<i>Emergency Agents.</i>	<i>Total.</i>
Number of consultations held, office and telephone.	1,996	823	2,819
Number of circular letters sent.	4,784	1,271	6,055
Visits to demonstrators, homes, clubs, schools, etc.	4,316	987	5,303
Number of Girls' Clubs. . . . .	....	....	225
Number of meetings held.	1,585	771	2,356
Total estimated attendance.	38,433 (girls and women)	8,862	47,295
Number of letters wrtiten.	4,055	672	4,727
Number of bulletins sent and distrib- uted.	8,519	2,783	11,302
Number of miles traveled.	44,886	7,747	52,633

STATE AGENT AND SPECIALIST'S REPORT.

Number of meetings attended.	181
Total attendance.	9,416
Number of visits to Agents.	54
Number of demonstrations given.	101
Number of miles traveled.	11,686

The great importance of the Home Demonstration and Girls' Club Work cannot be too greatly emphasized, especially at this time. Our farm women and girls can be aided in the various phases of practical home economics in the home, as can our

farmers and boys in the field. It is necessary to place the Women Agents on a substantial basis for yearly work. It is hoped that the Legislature will provide for this work in all counties and that travel expenses can be provided for the women as for the men. The farm home is the fountain of inspiration for the future farmers and home makers in our State. Everything must be done to aid in promoting contented and prosperous rural homes.

The following Women Agents are at work in the State; some of the temporary Agents have resigned, but others will be appointed:

Mrs. Leona Powell, Allegany Co.; Miss Mildred Brady, Anne Arundel Co.; Miss Alma Merwin, Caroline Co.; Mrs. Edith G. Norman (Asst.), Caroline Co.; Miss Viola Poole, Charles Co.; Miss Elva Akin, Dorchester Co.; Miss Emily Ebner, Frederick Co.; Miss Frances Gerber, Garrett Co.; Miss Margaret Schmidt, Harford Co.; Miss Janet Gaither (Asst.), Harford Co.; Miss Annie L. Copper, Kent Co.; Miss Helen Erickson, Montgomery Co.; Mrs. Susan Ward, Prince George's Co.; Miss Lucy Allen, Queen Anne's Co.; Miss Lillian Mattingly, St. Mary's Co.; Mrs. O. K. Walls, Talbot Co.; Miss Adice Jones, Washington Co.; Miss Goldie Cook, Wicomico Co.; Miss Ruby F. Chamberlain, Calvert Co.; Miss Sue Frick (City Worker), Hagerstown; Miss Alice C. Walton (City Worker), Baltimore; Miss Pearl A. Bernhardt (City Worker), Baltimore; and the following colored workers: Mrs. Sarah Ferdinandis, Baltimore City; Miss Leah Woodson, Charles and St. Mary's counties; Miss Edna Thomas, Princess Anne.

BOYS' CLUB WORK.

Mr. Reuben Brigham, who developed this work from the beginning, resigned July 1st, to become associated with the Department of Agriculture. Mr. Ralph McHenry is now in charge of the work, under the guidance of the Assistant Director.

Boys' Club Work has been conducted in all counties of the State. It is an important phase of County Agent work. Oftentimes it is only through work with the boys and girls that Agents can secure the co-operation of their parents. The success attending the Home State Tour, by which the successful club winners were carried by auto through all sections of the State last Fall, aroused much enthusiasm in the work and was

a means of establishing a closer relationship with the county school authorities for promotion of the work.

County School Superintendents have been consulted in each county, and many local Boys' Agricultural Clubs formed with the teacher as an active co-operative force on whom the County Agent could depend. In all cases, the Boys' Club Agent would assist in the organization and each secretary of the club supplied with a minute book, constitution, directions for conducting a club meeting and suggestions for program on timely subjects related to the lines of club work in which the number were especially interested. Each month there is sent to the County Agents, for distribution to club secretaries, a monthly letter prepared for the County Agents, for their signature, offering suggestions for a program based on an outline for the year, which was prepared in January. Supplementing this monthly letter are four instruction sheets, devoted to some phase each of corn, potato, pig and poultry growing. These instruction sheets are prepared from month to month by the specialists of the Extension Service for this especial purpose.

Through this plan, we have been able to secure a large enrollment of country boys in club work within a reasonably short time and without the dangers which attend a rapid growth and limited supervision.

In this work, the Service has had the warmest co-operation from the State Board of Education through the State Superintendent, Dr. M. Bates Stephens, and the various County Superintendents.

The following summary is submitted by Mr. McHenry:

Number Community or Agricultural Clubs organized..	117
Total enrollment.	1,747
Number club meetings held.	770
Total attendance, approximately.	15,500
Number club members conducting demonstrations under the supervision of County Agents.	1,288
Number club demonstrations—	
Corn.	453
Potatoes.	350
Pigs.	248
Poultry.	168
Tobacco.	47
Tomatoes.	22
Total circular letters, instruction sheets, minute books, etc., distributed.	80,000

In addition to regular club work, 247 boys have been enrolled in Emergency Garden Clubs.

The harvesting of products produced by club members is now in progress. Consequently, no definite statement can now be made regarding total yields, net profits, etc. However, based on last year averages, we forecast the following results: Boys' Club members will produce 22,650 bushels of corn, 8,400 bushels of potatoes, 49,600 pounds of pork and 5,544 pounds of poultry.

Based on today's market quotations:

22,650 bushels of corn at \$1.70 per bushel.....	\$38,505
8,400 bushels potatoes at \$1.25 per bushel.....	10,500
49,600 lbs. pork at 18c. per lb.....	8,928
5,544 lbs. poultry at 25c. per lb.....	1,386

Total approximate value Boys' Club products.....	\$59,319
--	----------

In addition to the above, 144 colored boys in the State enrolled as Farm Makers' Clubs, conducting demonstrations in corn, tomatoes, pigs, poultry and gardens under the supervision of two local (colored) demonstration Agents.

Four additional Assistants have now been added through the U. S. Emergency Funds, which will greatly aid in facilitating the enlarging of Boys' Club Work in the State.

AGRONOMY EXTENSION WORK.

Mr. W. B. Kemp served in capacity as Specialist in Agronomy during the past year, but resigned September 15th, 1917, to take up other work. An extended account of the demonstration work in Agronomy has been given in a previous report. The Specialist has aided the County Agents in conducting demonstrations in the growing of cereals, soy beans, alfalfa and permanent pastures where assistance was needed. A special effort was made last Spring to aid farmers in securing increased production by proper selection of improved varieties of seed corn, better methods of cultivation.

Special work was taken up with two large canners of sweet corn for raising seed corn for the use of themselves and growers for their canneries. There is an opportunity to greatly ex-

tend this work, as most of the sweet corn seed is purchased from without the State.

An effort has been made to seek out individuals who are growing first-class grain of improved varieties for seed purposes, so as to aid in its proper distribution rather than be sold in bulk for milling, etc. This was especially desirable this Fall for furnishing good seed wheat to growers. Great results have been observed from the sample varieties that have been sent out by the Experiment Station for demonstrational purposes. Mr. Kemp prepared the instruction sheets for Boys' Club Work in Agronomy, judged at several local community shows, aided in movable school work and visited a large number of farmers with the County Agents to advise with them concerning farm management problems.

Much work has been done in establishing lime demonstrations and other similar work along agronomical lines.

ANIMAL INDUSTRY EXTENSION WORK.

The importance of this work is strikingly revealed with the present shortage of meat products throughout the country. There is a large opportunity in Maryland for the development of the live stock industry. Dr. S. S. Buckley, in charge of this project, has conducted a vigorous campaign in co-operation with the County Agents during the past season for increasing our supply of meat. Live stock farming is extended much more gradually than other types of farming, because of the need of greater capital, greater special knowledge and because of greater chances of financial loss. Chief among the possibilities of great financial loss are those accruing from the prevalence of contagious and infectious diseases, and this factor becomes, therefore, the most important in the propagation of live stock. The diseases which have been the chief deterring factors in live stock development are Hog Cholera, Infectious Abortion, Tuberculosis, Leuco-Enccephalitis, and Parasitic Infections.

HOG CHOLERA WORK.

In order that these conditions should be modified as speedily and as effectively as possible, a plan for educational and demonstrational hog cholera work was devised in co-operation with the Bureau of Animal Industry, U. S. Department of Agricul-

ture. The U. S. Bureau of Animal Industry detailed a specialist, Dr. I. K. Atherton, to this Service to co-operate in the work.

The general plan of this work is the organization of local Hog Growers' Associations, with the initial purpose of saving hogs from exposure and loss from cholera by educational and demonstrational methods, and using these organizations for the general work of increased and improved hog production.

The work was begun in the Spring and proved very successful, and later enlarged by securing additional men from the U. S. Bureau of Animal Industry. The enlargement of the work to its present proportions was possible through funds provided by the live stock section of the State Board. In addition to this special work in selected districts, there has been a great amount of hog cholera work in various other sections of the State. It is believed that this work has greatly aided in reducing losses from this disease in the State. Moreover, the farmers have learned to adopt preventive methods to obviate as far as possible or circumscribe future outbreaks of the disease. Assistance has been given, as far as possible, towards the avoidance of loss from other communicable diseases of animals through educational means by the Specialist and Agents, as this is an effective way to reach farmers.

In all cases where diseases have developed and where inspection and control methods were necessary, the Live Stock Sanitary Section of the State Board has been advised.

SHEEP INDUSTRY.

A special effort has been made to develop the sheep industry in the western part of the State. In Garrett County, Sheep Growers' Associations have been formed, with a view of promoting the growing of sheep. Many meetings have been held for stimulating an interest in sheep and for arousing sentiment against the worthless dog which is the greatest menace to the sheep industry at the present time.

IMPROVEMENT OF BREEDS.

Much interest is being manifested in the improvement of breeds. An elaborate plan for stimulating interest and illustrating the merits and profits of improved live stock by local examples has been worked out, and it is hoped that finances

will permit carrying it out. Demonstrations in showing the advantages of animals bred for special purposes and for special markets over those of the general purpose types are in progress.

FEEDS AND MANAGEMENT.

Permanent improvement of live stock rests fundamentally upon better knowledge and practice of feeding and management of animals.

The Specialist has, in co-operation with the Agents, feeding demonstrations in progress. The raising of forage crops for hogs in order to save grain, etc., has received special attention in Southern Maryland, where the industry should be largely developed and where the farmers need advice in more profitable feeding, housing, etc., as well as in the improvement of breeds. However, the emergency situation has demanded that activities be directed first towards saving what we have of live stock and at the same time advocating provision for supplying the future, regardless in a measure of the question of breed and practice that would hold in normal times.

Dr. Buckley has traveled by rail more than 6,172 miles; addressed 66 meetings; aided in movable school work, together with large number of visits to farmers for purposes of giving advice. Dr. Atherton submits the following summary of hog cholera work conducted with Dr. Biles, Dr. Cass and Dr. Cole:

Number of meetings held.....	226
Number present at meetings.....	3,770
Number of vaccination and post-mortem demonstrations	142
Number present at demonstrations.....	673
Total miles traveled.....	15,064

HORTICULTURAL EXTENSION WORK.

Mr. S. B. Shaw, Specialist in charge of this work, reports that, due to the abnormal conditions existing last Spring, requiring an increased production of staple and other food crops, especial attention was paid to the planting of truck crops, as potatoes, encouragement of home gardens, etc. It was difficult to meet the demands for advice in the preparation and planting of gardens by city and suburban people who desired aid in the production of vegetables for home use. Special emphasis was given to the rejuvenation of home orchards for production of

clean fruit. The regular Horticultural demonstration work has been continued in co-operation with the Agents.

On account of the demand for seed of various kinds, including potatoes, beans, peas, etc., it was necessary for the Service to aid in supplying same through a special fund established by public-spirited citizens for the purpose. About \$20,000 worth of seed was purchased in large quantities at wholesale and distributed in small quantities to growers at cost. On account of the general status of the fruit industry and the demands in other directions, it was felt that Mr. Shaw could better devote his time to this work for the time being than any other Specialist.

He accordingly took care of the details in handling the seed work. It was a most difficult task, and Mr. Shaw deserves much credit for the manner in which the seed was distributed.

Early in the season, a bulletin on "The Garden" was prepared and published. Circulars on potatoes, corn, onions and strawberries were prepared and issued, together with much other matter on Horticultural subjects. During the past month Mr. Shaw aided materially in getting up an exhibit at the Southern States Exposition in New York.

Mr. Shaw submits the following summary of field work:

Fruit growers' meetings attended.....	20
Orchards visited with County Agents.....	57
Orchard field demonstrations, other than above.....	60
Garden Club visits.	7
Truck farms visited for advice.....	8
Visits to gardens.	46
Permanent orchard demonstrations.	18

DAIRY EXTENSION WORK.

The Dairy Extension Work is in charge of Mr. G. E. Wolcott, who also represents the Dairy Division of the U. S. Department of Agriculture.

The past year has been a most critical one for the Dairy interests of this State. The high price of grain and increased cost of labor have greatly increased the cost of production. There has been much agitation among the Dairymen as well as distributors and consumers regarding an equitable price of

milk. Fortunately, the matters have been adjusted without serious interruption or difficulty.

The above conditions have emphasized the importance of this work as the Community Breeding Club, the Cow Testing Association, the Individual Herd Record, the growing of silage and legume hay and help in the production of better milk, have brought encouragement and are being appreciated by the progressive Dairymen of the State.

COW TESTING ASSOCIATIONS.

Nine Cow Testing Associations are now being conducted in the State, with a total of 150 herds and 2,882 cows. The total number of associations could easily have been increased to twelve but for the difficulty in securing competent men to serve as testers. The first Maryland Cow Testing Association has been in operation since 1910. The following table shows the increased production from year to year:

<i>Year.</i>	<i>Lbs. Milk.</i>	<i>Lbs. Fat.</i>	<i>Cost of Feed.</i>	<i>Profit over Feed.</i>
1st.	4,456	202	45.67	37.14
2nd.	5,323	223	52.56	56.24
3rd.	5,116	229	46.99	67.30
4th.	5,572	224	55.73	72.73
5th.	5,442	241	55.68	66.50
6th.	5,512	237	58.23	69.39

The elimination of the low-producing cow is the factor which brings about the increased production for the first few years. Improvement due to individual feeding and use of the pure-brew bulls will necessarily be less noticeable.

The first year of the Second Harford Association brought out some striking results. The following table shows the average production of the Association; also the average of the high and low producing herds:

	<i>Lbs. Milk.</i>	<i>Lbs. Fat.</i>	<i>Cost of Feed.</i>	<i>Profit over Feed.</i>
Assn. average. . . .	5,113	224	48.81	41.17
High herd.	8,559	366	77.07	86.85
Low herd.	3,715	167	42.01	21.64

The foregoing shows what can be accomplished through this work. This work is conducted in co-operation with the Agents.

HERD RECORDS.

Where possible, Dairymen are urged to keep herd records. As an illustration, in Allegany County, five Dairymen were induced by the County Agent to keep records. The following table shows the herd averages for a year and the differences between the best and poorest cows:

<i>Name of Dairyman.</i>	<i>No. of Cows.</i>	<i>Lbs. Milk.</i>	<i>Lbs. Fat.</i>	<i>Lbs. Fat</i>	<i>Lbs. Fat</i>
				<i>Best</i>	<i>Poorest</i>
				<i>Cow.</i>	<i>Cow.</i>
A. T. McLuckie.....	38	6,149	245	444	93
L. Smith.	14	6,985	244	454	123
W. H. Johnson.	34	7,127	321	447	133
Perry Wilson.	10	6,180	247	335	123
C. W. Lang. . . . .	..	6,073	275	323	100

CATTLE PURCHASED.

At Federalsburg and Cambridge, Cow Clubs were organized for the purpose of purchasing a carload of grade Guernseys and a carload of Holsteins. The members of the club guaranteed the purchase price. The cows were sold at auction. The Specialists have aided other communities in the selection of stock.

MISCELLANEOUS WORK.

Mr. Wolcott emphasizes the importance of Bull Associations. Seven daughters of Milky Way Masher of Wa Wa averaged 7,580 pounds of milk, 282 pounds of fat, while dams averaged 5,426 pounds milk, 200 pounds of fat; other examples given show the advantage of extending this work.

The Specialists in co-operation with Agents have aided in building silos, demonstrating a wooden hoop silo constructed at a cost of \$162.75. A Boys' Judging Contest is conducted annually at Frederick Fair. Mr. Wolcott has made 451 farm visits and delivered about 30 lectures on dairy subjects.

RURAL ORGANIZATION AND MARKETING.

During the past year, Messrs. F. B. Bomberger and C. S. Richardson devoted part time to this work. June 1st, 1917, Mr. Bomberger became associated with the Service as Assistant Director and Specialist in Rural Organization and Marketing. Prior to June 1st, Mr. Bomberger devoted as much time as possible to the organization of farmers in co-operation with the Agents. Granges have been formed in the State; also farmers' clubs and other community organizations. In addition, much follow-up work has been done by way of correspondence. By-laws, constitutions and plans of work for various organizations have been prepared in order that those already organized could be made more effective in their activities. This evolved much correspondence and traveling. Possibly the most successful single instance of rural organization is evidenced by the County-Wide Sheep Growers' Association in Garrett County. This consists of a number of local Sheep Clubs at various points in the county, all of which are affiliated with the County-Wide Association.

In the field of marketing, not much has been accomplished except in an indirect way. Rural organizations have been encouraged to buy and sell co-operatively, and on all occasions have been urged to standardize their products for marketing and labeling them in such a way as to win the confidence of the consuming public.

The Western Maryland Seed Potato Association, organized last year, has been given additional encouragement, and forms of contract were provided for its members whereby a closer union of action could be guaranteed. It was hoped to develop the marketing work more vigorously, but funds for securing additional assistance have not been available. There is great need for rendering assistance in the marketing of farm products in this State. Mr. Bomberger has greatly aided in the formation of National Farm Loan Associations in several counties. He prepared a bulletin on the Federal Farm Loan Act, and "The Farmer"; also a bulletin on the "Torrens System of Land Title Registration." Since June 1st, Mr. Bomberger has greatly aided in general administrative work and supervision of the Agents, and at the same time followed the work on organization.

Mr. Bomberger submits the following data:

January 1st, 1917, to May 31st, 1917—	
Meetings attended.	39
Addresses delivered.	34
June 1st, 1917, to October 31st, 1917—	
Meetings attended.	44
Addresses delivered.	35
Attendance at meetings.	8,418
Visits to Agents.	33
Miles traveled.	5,555

While Prof. C. S. Richardson is not officially connected with the Service at this time, he has greatly aided the work of organization and developing community interest. During the Spring, he and the Director accompanied the Governor of the State on a tour of the State, to arouse the farmers to the importance of greater food production. Throughout the year he has cheerfully aided the Service by meeting requests of County Agents and others for speaking engagements. During the past season Professor Richardson has made 48 addresses. The approximate attendance at the meetings being 12,000.

POULTRY EXTENSION WORK.

Commencing with the present fiscal year, provision was made for a Specialist in Poultry Husbandry. Mr. H. W. Rickey was secured for this work, reporting for duty September 1st, 1917.

There are great possibilities for the development of this industry in the State. The work will be co-ordinated with the General Animal Industry Extension activities. Mr. Rickey has spent most of the time, up to the present, in visiting 18 counties, conferring with Agents and learning conditions. He has secured eleven demonstrations in winter egg production, as every effort must be made to increase the production of eggs. It is believed that much can be accomplished in aiding the present meat supply by the raising of more poultry.

ENTOMOLOGICAL EXTENSION WORK.

Considerable work has been conducted along Extension lines in the control of insect pests by Mr. E. N. Cory, State Entomologist, and Assistants who devote part time to this phase of insect control.

Spraying demonstrations have been given, and many visits made to County Agents for purposes of advice on the control of various pests.

In the Spring, a special spray calendar was prepared by Mr. Cory and issued by the Service. A special effort has been made to reduce injury to staple crops by injurious insects. Instructions guarding against injury from the Hessian fly to wheat have been issued, together with other timely information for growers. All correspondence pertaining to insect pests has been taken care of by Mr. Cory. He has also greatly aided the Service in conducting the Maryland Week Show and meetings, and recently in preparing and installing an agricultural exhibit at New York.

BEE KEEPING.

Arrangements were made during the year to secure Mr. G. H. Cale, an expert in apiculture, to aid this industry in the State. He devoted part time to Extension work. Every effort has been made to give assistance to Bee Keepers. A survey of the industry is in progress. Five field meetings have been held.

During this emergency, it is especially desirable to increase the honey crop on account of the shortage of sugar. Financial aid from the State Council of Defense has enabled us to extend features of this work, as well as insect control.

PLANT DISEASE EXTENSION WORK.

Prof. C. E. Temple, State Pathologist, is in charge and devotes part time to the work. Every effort has been made to reduce injury from disease. Special demonstration work with the Agents has been conducted in controlling brown rot in peaches, blight in potatoes and tomatoes, as well as miscellaneous diseases of crops. There is a tremendous loss annually in the State from blight and wilt diseases on tomatoes.

An extended demonstration in spraying tomatoes and use of resistant seed, evolving more than 70 acres of tomatoes, has been conducted in co-operation with the U. S. Department of Agriculture and the Experiment Station, in the region of Hurluck, Md., with very gratifying results. A full report in this work will be submitted later. In one patch there was a difference in yield, between the wilt resistant and commercial seed, of 196% in favor of the wilt resistant plants. More than 50 lbs. of wilt resistant seed has been saved for next season's work.

As this State produces such a large quantity of tomatoes, its total pack approaching one-half the pack of the country, it is believed that every facility should be extended towards evolving a treatment and practice to prevent loss from disease from blight and extending the use of wilt resistant seed.

Special work has been conducted with the seed potato growers of Western Maryland, where a new industry is developing in producing seed potatoes for other parts of the State. Several spraying demonstrations have been conducted in Allegany and Garrett counties for the control of blight on this crop. Professor Temple has aided in movable school work and in conducting pruning demonstrations when necessary. This work has been extended during the past summer through funds given by the Council of Defense.

Mr. W. C. Travers, who is primarily employed for inspection work, was able to conduct several demonstrations, in co-operation with the Agents, for the control of brown rot on peaches, which gave splendid results. Mr. Travers conducted these demonstrations in nine peach orchards located in different counties. The nine orchards contained in all 37,000 peach trees; they produced 83,123 baskets of good fruit. The cost of labor and spraying was \$9,550; the net profit to the growers was \$29,011.

MOVABLE SCHOOLS.

There is a demand in some sections of the State for neighborhood short courses or movable schools. Owing to the fact that in the past, the Farmers' Institute Work was not co-ordinated with the Service, it has been difficult to hold such schools without interfering to some extent with the Institute work. Accordingly, this work was not pushed, and only those sections that especially requested this character of work were taken care of. With the Institute work under the direction of the Service, both movable schools and Institutes can be so arranged as to suit the communities, as well as the available force. The movable school serves to carry the college short courses in any particular subject to the farmer or the home maker.

This work will be thoroughly organized for the coming Winter. It is also hoped to arrange for the distribution of educational films through rural organizations.

CORRESPONDENCE COURSES.

On account of the delay in securing lessons for the correspondence courses, the work has not progressed as was anticipated. It should be stated that all those who promised to furnish lessons in courses offered have been greatly crowded with their regular duties.

An effort is now being made to complete courses started and to conduct the work as vigorously as possible this winter.

MISCELLANEOUS WORK.

Much assistance has been given by men in the various divisions of the College and Station.

LANDSCAPE GARDENING.

Prof. B. W. Anspen has greatly aided the Service in giving assistance to backyard gardens in Baltimore City during the past year. He has also aided in landscape extension work. Many schools and public institutions have been given instruction in proper plantings of grounds. A bulletin on this subject prepared by Mr. Anspen is now in press. There is a great demand for assistance and information for the improvement of home grounds, school grounds and municipal institutions.

Professor Anspen reports the following summary:

Visits made and advice given on landscape gardening..	16
Plans made.	12
Lectures given.	18
Gardens inspected (Baltimore garden work). approxi- mately.	250
Judging at Flower Shows.....	4

Prof. W. T. L. Taliaferro has greatly aided the Service by giving advice on farm management problems. He has made several visits to aid in judging at Fairs and Community Exhibits. The Division of Engineering has assisted in drainage and rural engineering problems. A bulletin on "Electricity on the Farm," prepared by Mr. Creese, is ready for publication.

Prof. J. E. Metzger, of the Station, has assisted in the Agronomy Extension work, especially this Fall, when the Service is without a Specialist in this subject.

Other representatives of the Station and College Departments have aided in emergency calls when their other duties would permit.

COMMUNITY EXHIBITS.

On account of war conditions, it was determined by the Council of the Maryland Agricultural Society to postpone the Maryland Week Agricultural Exhibition, which has been held annually in the Fifth Regiment Armory, Baltimore, Md., during November. The annual meetings of the society and affiliated associations will be held in Baltimore, December 18th-22nd.

In the place of the State exhibit, it was felt that the educational features of the exhibition could better be continued at less cost and greater convenience to the people by the encouragement of local community shows in rural sections. Consequently, a small allotment of the society's funds (\$100) was made to each county, to be offered as prizes for agricultural exhibits at Community Shows.

A wonderful response has been made to the suggestion. Communities which have never heretofore gotten together for any purpose have organized and held splendid displays of their agricultural products. As many as ten of these shows will be held in a single county. The County Agents have aided in organizing the communities and the Service is furnishing speakers and demonstrators where possible. To date, about fifty of these local shows have or will be held.

The result of this work will be far-reaching, as hundreds of farmers have been induced to make exhibits and attend the shows that have never heretofore taken part in such public work.

The educational features have been emphasized in seed selection, what constitutes good varieties, and grades of products. The mere factor of inducing a farmer to display his produce induces him to learn how his neighbor won the award and gives him an opportunity to observe or have explained the reasoning of the judges' decision.

It is believed that the holding of these local shows will even serve a more useful purpose for the number or class of farmers they reach in demonstrating higher standards of products than the great Maryland Week Exhibition. At any rate, on account

of the conditions, the special encouragement given to community effort along this line will serve a most useful purpose in carrying out the aims of the State societies, and also the Extension Service, in promoting greater production and a higher standard of agricultural products.

CONCLUSION.

This past year has been a most strenuous one for the members of the Division. Much additional work, resulting from war conditions, has been prosecuted. There is a fine spirit of co-operation throughout the organization for earnest and effective work.

EXTENSION SERVICE,
Maryland State College of Agriculture.

REPORT OF THE STATE HORTICULTURAL DEPARTMENT.

THOMAS B. SYMONS, *Director.*

The law creating this department provides for the encouragement and development of the Horticultural Industry of the State by the control of insect pests and plant diseases and for conducting such investigations and demonstrations as will promote every phase of the industry.

Horticulture in the State has made great strides during recent years as a result of the work of the department and the intelligent application of remedies for the control of pests and the adoption of up-to-date cultural methods by the progressive growers. Too much credit cannot be given to the orchardists, nurserymen and others for the co-operation that has been given to the officers of the department in the prosecution of the work.

There are many problems in insect and plant disease control that should be further investigated so as to evolve practical methods of control. New problems are constantly coming up requiring attention. No particularly serious outbreak of insect pest or disease has appeared in the State during the past year, but there are many causing annual losses.

Prof. E. N. Cory, as Associate Entomologist, has had immediate charge of the insect work. He has recently been appointed State Entomologist. Prof. C. E. Temple, State Pathologist, has conducted the State work in control of plant diseases. Thomas B. Symons, Director, gives general supervision over the work of the department.

The various phases of work can best be discussed under the following heads:

NURSERY INSPECTION.

The regular Nursery Inspection has been conducted as heretofore. Forty-five nurseries have been inspected to date. A number will be inspected in the Spring. Last year a total of sixty-one was inspected. The nurseries, as a whole, were found to be in good condition. The Nurserymen realize the impor-

tance of treating their growing stock, so as to keep it as free as possible of various pests. The practice of having an inspector located at the larger nurseries during shipping season at stated times is being continued, as it greatly aids in the distribution of clean stock.

The strawberry root louse is reported on the increase in strawberry nurseries. A special effort will be made this season to have all plants for distribution dipped in black leaf to prevent the spread of the pest.

INSPECTION OF IMPORTED STOCK.

Notwithstanding war conditions, a great amount of imported stock is shipped into the State. During the past season, 293 cases of stock, totaling 46,540 plants of various kinds, have been examined by the members of the department. While stock is shipped to all parts of the State, the major portion of it arrives at Baltimore and other central points.

Two egg masses of the Gypsy moth and several minor pests have been intercepted by the inspectors. Only those who are familiar with the great danger of having the Gypsy moth, for instance, established in this State, as well as other foreign pests, can appreciate the great importance of a thorough inspection of this stock.

Special attention should be given the inspection of this stock during the coming Winter and Spring, on account of the present unsettled conditions in Europe.

ORCHARD INSPECTION.

The policy of depending upon complaints from growers and on general observation in traveling over the State of the existence of neglected orchards seems to give satisfaction. All complaints have been given prompt attention, inspections made and suggestions given for improvement. Mr. W. C. Travers, Inspector, who is detailed to make orchard inspections, has made 548 visits to orchards and traveled 11,526 miles.

Spraying is now universally practiced by growers for the control of scale and codling moth. There is still much room for improvement in treating for clean fruit. Trees showing signs of yellows are usually promptly removed. The general demonstration work conducted in each county is resulting in improved conditions.

WHITE PINE BLISTER RUST.

The great spread of this disease throughout the New England States and the West caused considerable apprehension in this and the States that were as yet free of the disease. To date, the disease has not been found in Maryland. In order to prevent, as far as possible, its introduction into the State, a quarantine was established, through a proclamation issued by the Governor of the State, against the shipment of pines, gooseberries and currant bushes into the State. This quarantine has not been lifted, and it is hoped that we may be able to keep the disease out of Maryland.

DEMONSTRATION WORK.

A large amount of extension and demonstration work for the control of insects and disease has been conducted by the officers and assistants of the Department. This work, while conducted in conjunction with the Extension Service and reported on under that division, is provided from State Horticultural funds. It is difficult to differentiate at times on this work between educational and control work. Peculiar outbreaks of plant lice on potatoes and tomatoes have occurred this season and prompt measures taken to control them. Extended demonstrations for the control of brown rot on peaches has been conducted by Mr. W. C. Travers, in co-operation with the County Agents.

CONTROL OF TOMATO DISEASES.

For several years, miscellaneous work has been in progress for the control of blight and wilt of tomatoes. Professor Norton has conducted an extended investigation in developing a resistant variety of wilt disease.

During the past season an elaborate plan of work for the control of these diseases has been carried out on commercial tomato fields, embracing more than 73 acres, in the vicinity of Hurlock, Md. Throughout this region, these diseases have caused enormous losses. Professors Temple and Norton, together with representatives of the Bureau of Plant Industry, who co-operated in the work, devised a number of spraying tests for the control of blight, and tests, using plants of wilt resistant seed planted in ground badly infected with the wilt disease.

The demonstration and experiment have been highly successful. A full report will be available later.

Every effort should be made to extend this work, as an enormous loss can be prevented if only wilt resistant seed can be generally used. More than 50 pounds of wilt resistant seed has been saved this year for distribution another season. A large amount of work has been conducted by Professor Temple in demonstrating the control of blight on potatoes.

INVESTIGATIONAL WORK.

While the investigational work is reported and conducted under the Experiment Station auspices, yet the officers of this department generally direct it. Some projects are conducted from these funds.

One problem which has been in course of investigation for some time and being continued is, evolving a practical method for controlling the woolly aphis which is a serious pest of nurseries and orchards. It is hoped that recent work will be productive of good results. Another project in progress is repelling stable flies. Comparative insecticide tests are being continued and work in the control of the corn root louse is being conducted.

Professor Temple is devoting all available time to the investigation of tomato and orchard diseases.

APICULTURAL WORK.

A small allotment from the State Horticultural funds has been made to aid the bee-keeping interests in control of bee diseases. It is in the interest of Horticulture that the keeping of bees be encouraged and protected.

During the year 120 apiaries have been visited and assistance has been rendered the owners. More than 1,200 bee keepers are on the mailing list of the department. Lack of funds prevented a regular inspection of all the apiaries in the State. Two disease districts were visited and infected colonies found and successfully treated by the Apiculturist, Mr. G. H. Cale.

Two experiments of a practical nature have been initiated, one on winter protection of bees, and the other on cross-pollination of greenhouse crops by bees. A large amount of circular matter giving instruction on bee keeping has been issued through the Extension Service.

APPLE GRADING AND PACKING LAW.

With the end in view of establishing uniform grades of apples for the State, the last Legislature passed an apple grading and packing law. The aim of the law is to bring about improvement in the methods of grading and packing, to insure uniformity in the grades and in the marking of the packages, and to facilitate the marketing of the fruit.

The enforcement of the law is vested in the State Board of Agriculture, its officers, agents, etc. No funds were provided for the work.

Some educational work has been done during the past two years by the representatives of the department and the Extension Service, but no attempt at enforcing the law has been made. A bulletin was issued by the Extension Service explaining its provisions and giving information regarding the packing of fruit.

It is possible that some amendments may be desirable. It is believed that the best means of approaching the matter is by having a national law to establish standards; nevertheless, the need for regular standards in this State is evident, and an effort should be made to carry on this work.

MISCELLANEOUS WORK.

The regular College work has been conducted by the representatives of the department. A large amount of correspondence and identification of specimens have been given attention by the officers of the department.

RECOMMENDATIONS.

The present appropriation for this work is \$8,000. Both Professors Cory and Temple urge that an increase be secured, in order to permit them to meet the demands for increased work in the State. A substantial provision should be made for the inspection of apiaries and promoting the apicultural industry. Also more assistance is needed in both departments. Ten thousand dollars (\$10,000) could economically and very profitably be devoted to the tomato disease work alone in the State, not to mention other crop diseases.

The following is therefore requested:

For carrying out the provisions of the apicultural law and to promote bee-keeping interests—		
Present appropriation requested.	\$3,000	
For carrying out provisions of the apple grading law..	3,000	
For increasing the work of the insect and plant disease work in the State.....	\$8,000	14,000
	<hr/>	<hr/>
	\$8,000	\$20,000

REPORT OF FARMERS' INSTITUTE.

THOMAS B. SYMONS, *Acting Director.*

Farmers' Institutes were conducted in every county of the State during the season of 1916-1917. In several counties Institutes were conducted in two or more centers in the county. Two or more sessions were held at 83 places in the State, with an approximate attendance of about 15,000 adults. In most cases, the Institutes were arranged locally through the County Agents. In all about seventeen lecturers and demonstrators from State and Government agencies, as well as other sources, aided the department in its work.

The plan followed in arranging Institutes has been to discuss special topics of interest to the farmers of the respective sections. The varied agriculture necessitates a wide range of Specialists to properly fill the needs of the State. Fundamental work in the improvement of the soil and the raising of farm crops and live stock, together with marketing, were emphasized.

Dr. R. Hill, formerly Director of Farmers' Institutes, died June 6, 1916, following a severe illness. Dr. Hill has been Director of Institutes for the past seven years. The people of the State are familiar with the earnestness with which he directed his attention to this work.

Institutes, with two or more sessions, were held at the following places:

Brandywine,	Chaptico,	Berlin,
Surrattsville,	Mechanicsville,	Fruitland,
Baden,	Leonardtown,	Salisbury,
Oldtown,	Ridge,	Hebron,
Flintstone,	Prince Frederick,	Vienna,
Piney Grove,	Huntingtown,	Hurlock,
Grantsville,	Glen Burnie,	Hepburn,
Accident,	Owensville,	East New Market,
Bittering,	Brookeville,	Linkwood,
Highland,	Germantown,	Cambridge,
Darlington,	Marion,	McDaniel,
Bel Air,	Princess Anne,	Trappe,
Hughesville,	Pocomoke,	Easton,
Wayside,	Snow Hill,	Preston,

Cordova,
Wye Mills,
Federalsburg,
Denton,
Ridgely,
Massey,
Chestertown,
Sudlersville,
Galena,
Church Hill,
Price,
Elkton,
Centerville,
Rising Sun,

Mt. Airy,
Westminster,
Middleburg,
New Windsor,
Sykesville,
Clarksville,
Frostburg,
Freeland,
Glyndon,
Sparks,
Towson,
Goldsboro,
Cecilton,

Frederick,
Jefferson,
Middletown,
Myersville,
Thurmont,
Glenwood,
Kennedyville,
Crisfield,
Downsville,
Hagerstown,
Boonsboro,
Clear Spring,
Randallstown.

REPORT ON THE EMERGENCY EXTENSION WORK.

THOMAS B. SYMONS, *Director.*

Upon the realization of the importance of the food problem last Spring, immediate steps were taken to devote every effort towards securing an increased acreage and yield of staple crops and to promote in every way the raising and conservation of food products. The Extension Service organization furnished the natural agency through which emergency work of this character could be carried on. It was, therefore, desirable to make this organization as efficient as possible, by providing ample facilities and supplementing our forces as much as possible. The funds made available through the committee appointed by the State Council of Defense have been a material factor in meeting agricultural needs and aiding in the Emergency Work.

SEED DISTRIBUTION.

In the early Spring, a survey of the State was made to ascertain if farmers possessed or could secure sufficient seed for planting. This survey revealed the need for seed of various kinds, including potatoes, cowpeas, soy and navy beans. It was also found that many farmers could not purchase seed on account of the high price and lack of finances.

A private fund was established with the aid of the Governor of the State, State Treasurer and the State Board of Agriculture, to which public-spirited citizens subscribed, to enable the Service to purchase seed in large quantities and distribute same to farmers at cost, upon nine month's credit.

The following amount and kind of seed was purchased and distributed:

Cowpeas.	1,958 bushels
Navy Beans.	188 bushels
Soy Beans.	234 bushels
Potatoes.	2,123 bushels
Miscellaneous.	15 bushels
Total cost of Seed.	\$19,325.21
Total number of orders shipped.	647

This entailed a great amount of clerical work at the office and by the County Agents, through whom the seed was distributed. The securing of payments and notes has been also quite a burden upon the Agents.

There is no doubt, however, that this assistance was a material factor in not only furnishing seed at reduced cost, but also served to greatly increase the acreage to these crops. The Council of Defense has contributed \$4,600.20 to this work. While there will probably be some losses, yet it is believed that 95% of the money will be returned to all parties.

THE LABOR PROBLEM.

In the Spring the farm labor problem loomed up as being most acute. Every effort was made to ascertain the general condition and needs in the State, and to aid in its solution through the present agencies. The County Agents spent considerable time in aiding farmers in their particular sections in securing as much labor as was available at the price that the farmer could afford to pay. With the formation of the Farm Labor Bureau by the Council of Defense, a definite medium was provided to aid the County Agents in supplying labor. Throughout the season, the Agents co-operated with the Labor Bureau, as well as with other agencies, in securing available help for farmers, canners and for various agricultural industries.

ASSISTANCE TO MEN AGENTS.

On account of the great amount of Emergency Work that was thrust upon the County Agents, it was necessary to aid them in defraying additional traveling expenses, furnish some assistance and give them clerical help for their offices. An allowance per month was made for each, for three months, beginning July 15th. This aid by the Council of Defense has been of inestimable value, in increasing the efficiency of the County Agent force. The clerical help has relieved them of office work, facilitated prompt correspondence, etc., and enabled them to devote more time to greater work in their counties. By having someone in the office of an Agent, farmers are always able to get in touch with the Agent or learn his whereabouts. The financial assistance for traveling expenses afforded increased mileage. The auto mileage of Agents varies from 1,000 to 1,600 miles

per month. It is hoped that this assistance can be continued during the emergency period, or until permanent arrangements can be made to provide for these necessary expenses.

WOMEN AGENTS.

Early in the season Emergency Women Agents were employed to work in counties having no agents. Provision for the women's work has been mainly through the U. S. Department of Agriculture Emergency Funds. In co-operation with the State and County Committees of the Women's Section of the Defense Council, valuable assistance has been rendered in encouraging the canning and preserving of fruits and vegetables, as well as doing other valuable work along Home Economic lines. The clerical assistance furnished the men has also aided the Women Agents.

NEGRO WORK.

A special effort has been made during the season to aid the colored farmers, and to encourage the colored women to can and preserve food products. Both men and women agents have been employed to work in the populous regions. Splendid results have attended the efforts of the agents to interest the colored people in the Emergency Work. The Council of Defense has contributed to this work.

CONTROL OF INSECT PESTS.

At the approach of Summer, some unusual outbreaks of insect pests occurred, and through the Council of Defense additional funds were provided to enable our forces to greatly aid in the suppression of such outbreaks, and in promoting an educational propaganda for the prevention and control of insect pests generally. When it is understood that there is annually a toll of at least ten per cent., due to insect injury, of agricultural products, the advantage of reducing this injury to the minimum can be realized. A field Entomologist has been employed, who is devoting his whole time to this important work, supplemented by the regular departmental forces. A special bulletin on the "Control of the Hessian Fly" has been published. A special effort will be made during this Fall and Winter to reduce to the minimum injury from insects and rodents affecting stored products. An exhibit covering the salient points of this work

has been displayed at all the fairs on the Western Shore. A campaign of demonstrations on the farms of the control of stored products pests is under way.

APICULTURAL WORK.

Emergency funds made it possible to largely extend our educational and demonstrational campaign for increasing the honey industry in the State. Definite work was undertaken in eleven counties of the State. Field meetings, demonstrations in handling bees, control of disease, etc., have been conducted. A special exhibit was made at the County Fairs. The shortage of sugar makes the encouragement of this industry especially important. Plans are maturing for the establishment this Winter of a central wax rendering station at the College, to which bee keepers may send for rendering into market wax such old combs and waste scraps of wax as they may have. This will relieve the bee keeper of a rather disagreeable and little understood task, and save a valuable lot of beeswax, now annually wasted.

PLANT DISEASE CONTROL.

Much injury is occasioned annually by plant diseases. The Emergency Funds supplemented our regular agencies in prosecuting this work. Special demonstrations have been conducted in Western Maryland to prevent and control the blight on the late potato crop, which is important in that section. Last year there was less than one-half a crop, due to this disease. A public spraying machine was in operation for some time, demonstrating to farmers how the disease can be controlled. Emergency Funds augmented the work being conducted on the Eastern Shore for the control of blight on tomatoes. Many fields of tomatoes only produced one-half what they should, due to this disease and the wilt.

A special campaign has been conducted this Fall in treating wheat to prevent stinking smut. More than 4,000 bushels of seed wheat have been treated with formaldehyde. Exhibits and demonstrations have been made at the County Fairs.

SEED WHEAT.

With the view of aiding in the distribution of adaptable and greater producing varieties of wheat to many sections of the State, the Service endeavored to supplement this work, which

the Experiment Station has been doing for several years, by seeking out farmers having good wheat for sale. The Agents induced farmers to buy at least a bushel and one-half of such wheat for planting. This would serve to demonstrate the superiority of the variety and produce a quantity for seed wheat another year. On account of the excessive wet weather following harvest, much wheat was injured in different sections.

It was found to be a difficult problem to locate good seed wheat of desirable variety. However, much exchange in seed wheat has been accomplished within the counties, and a number of bushel and one-half lots placed.

On account of the wheat generally not being threshed prior to seeding in wheat-growing sections of the Western Shore, this project did not reach the proportions that were anticipated. All wheat was exchanged on a C. O. D. basis, so that no funds were expended on this work.

PUBLIC TRACTORS.

Last Spring there was a demand for public tractors in several sections of the State, but funds were not available. A similar demand was made this Fall to aid in plowing ground for wheat seeding. It was, therefore, decided to secure four tractors and put them in operation as public machines, to test the practicability of the plan. Two of the machines commenced work about September 6th. Owing to transportation congestion, the two other machines did not commence work until September 20th. Mr. W. W. Smelker, of the Engineering Division, aided the Agents in getting the machines started.

All of the tractors are doing splendid work. The machines are working in Kent, Cecil and Harford counties. In each county the Agents report entire satisfaction on the part of farmers with the work the machines are doing. One gratifying result from this work thus far is the demonstration to the farmers of the practicability of the tractor for farm use.

The greatest problem is to secure competent operators. There is reported a much greater demand for work in each county than the machines can take care of. A charge of from \$2.50 to \$3.00 per acre is made for plowing, and 50c. to \$1.00 for discing and harrowing. At present the revenue is in excess of operating expenses.

On account of the lateness in getting the machines at work, together with the usual delays and difficulties incident to start-

ing a new proposition, such as this, it is not felt that we can as yet draw conclusions from the present results of the work.

CONCLUSION.

It is believed that every effort has been made to encourage and assist the farmers and homemakers to respond to the call for increased production and conservation of food products. Funds allotted by the State Council of Defense to this Service have greatly aided our regular agencies in extending their field of action, and in more adequately meeting the demands of the people. A careful scrutiny has been made of all plans to insure an economical and profitable expenditure of public money.

We believe that the results have more than justified the extra efforts and the extra expense.

A brief financial statement is attached to this report.

STATEMENT OF EXPENSES FROM STATE EMERGENCY FUND.

	<i>Expenditures.</i>	<i>Receipts.</i>
By Allotment.		\$25,000.00
County Agents.	\$4,440.01	
Boys' Club Work.	144.13	
Control Insect Pests.	321.50	
Control Plant Diseases.	787.97	
Apiculture.	72.14	
Miscellaneous.	172.04	
		5,937.79
		\$19,062.21
By Tractors, to date.	\$116.90	
By Tractors, to date.	21.75	
		138.65
		\$19,200.86
Tractors, etc.	\$5,750.38	
Seed Distribution.	4,512.60	
		10,262.98
		\$8,937.88

NOTE.—It is pointed out that funds for public tractors and seed distribution were not supposed to be deducted from the \$25,000 allotment for regular work, but was paid from the above for convenience.

October 29th, 1917.

Report of Eastern Branch of Md. State College of Agriculture Princess Anne Academy, Princess Anne, Md.

J. O. SPENCER, *President.*

FAVORABLE LOCATION OF THE EASTERN BRANCH.

This Branch, located at Princess Anne, Somerset county, in the midst of a great farming and trucking region, is in a position to greatly influence the growth and development of agriculture throughout Maryland among the large numbers of colored farmers and truckers. The production of orchard fruits, small fruits and vegetables has very greatly increased with the extended development of the State College work, especially in the control of insect pests and plant diseases. Great progress has also been made in improved varieties and better seed. Proper cultivation has also largely figured in the increased gain.

AGRICULTURE.

An effort has been constantly made to increase the agricultural instruction and develop in the young men a hearty appreciation of agriculture as a vocation, and the improvement of farms and gardens is a prime object. Hence, instruction is given in standard crops, trucking and market gardening, dairying, poultry raising and hog raising. In this line with the limited facilities some success has been attained.

FARM DRAINAGE.

The general location of the lower counties of the Eastern Shore at an elevation scarcely above tidewater, and the uniform flatness of the country make farm drainage very necessary and somewhat difficult. The College farm has been laid out by the Agricultural Department of the United States Government as a farm drainage demonstration, and has attracted attention widely because of the eminent success of the work. Open ditches with the accompanying hedgerows have entirely disappeared from the farm, thus making the cultivation much easier and more successful. It has also considerably reduced insect

pests and added greatly to the appearance of the farm. The drainage enables us to work the soil an aggregate of about forty days per year more than would be possible without such drainage, and at the same time there is less danger of injuring the soil by working when there is too much water present.

STOCK.

Owing to the limited area of the farm and the necessity for quite diversified crops in the matter of instruction, also the lack of housing facilities, we do not aim to keep a large number of cows. We have, however, a select number of Guernseys of which records are carefully kept. The presence on the farm of a thoroughbred bull enables the farmers for miles around to improve their stock, which improvement has been most marked in the past five or six years. Like improvement is also shown with the swine.

POULTRY RAISING AND HOME GARDENING.

Plans have been adopted for giving instruction to the young women, not only in domestic science and art, which have been pursued from the beginning, but also in poultry raising and home gardening, with the idea of greatly increasing the production of poultry and vegetables in the homes from which the young women come. It is believed that this will add materially to the production in the State and fully compensate for all expenditure made.

MECHANICAL INDUSTRIES.

Instruction is given in blacksmithing and iron working, wagon making and repair, carpentry and printing. Special attention is given to the building and repair of ordinary farm vehicles and the repair of farm machinery, that the young men who take these courses may be able to improve conditions in the neighborhoods to which they go, or to pursue advanced courses of mechanical instruction.

A course, theoretical and practical, is given in horseshoeing, which course also includes a thorough study of the anatomy of the horse and proper care of the animal to insure health and strength.

The woodworking department keeps the buildings and furniture in repair as far as possible, and erects or assists in the erection of buildings. They are now engaged in the construction of one wing of an iron-working building.

The printing department gives instruction in the organization and management of a job plant, publishes a monthly bulletin, gets out the printing and stationery for the School and also does a few jobs for outside parties.

IMMEDIATE NEEDS.

DORMITORY AND IRON-WORKING BUILDING.

The Branch needs additional dormitories for young men so that a larger number may be drawn into agriculture, trades and industries, and with a greatly increased attendance, especially of young men, it would be possible to start a night school for those who might work in the day on the farm and in the shops accumulating some part at least of the funds necessary to continue their education.

There is also great need of a much larger and better equipped iron-working building and a building specially designed for teaching domestic science and art. Adequate buildings for housing farm machinery are being considered and we hope to erect such during this Fall.

ADVANCED INSTRUCTION.

Some provision should be made in the State for those young men who wish to continue their agricultural education in a full Agricultural College course. This can doubtless be done in connection with the advanced work of Morgan College by the co-operation of the Maryland State College of Agriculture. It is hoped that this will be done at no distant date.

FARM MACHINERY.

A first-class, medium-sized tractor capable of being used for purposes of cultivation and also for driving ensilage cutter, woodsaw and other machinery, is a great necessity. This would reduce the number of draft animals on the farm—a thing which is highly desirable now that corn is \$2 or more per bushel.

EXTENSION WORK.

The appointment of Mr. Louis Martin as colored Farm Demonstrator on the Eastern Shore, with headquarters at the Eastern Branch, has greatly stimulated the work of the farm community. At present the area assigned to him is altogether too great for one man to cover, and it is hoped that an additional man will be placed on the Eastern Shore in the northern counties at no distant date. Plans have been laid for the placing of a woman to assist in this Extension Work in domestic science and home making. It is hoped that this will be accomplished at once.

The recent expansion of the work of the Maryland State College of Agriculture and the progressive policies now under consideration are reaching our colored people and are greatly encouraging them in agriculture as a permanent vocation. If we can thus reach these people, so many of whom either as owners, renters or laborers are the original cultivators of the soil, much will be accomplished in the agricultural improvement of the State.

The following table shows the enrollment and the special designation of the numbers taking trades and industries:

TEACHER AND STUDENT ENROLLMENT OF PRINCESS ANNE ACADEMY, 1917.

TEACHER ENROLLMENT.

	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>
Teachers.	9	6	15

STUDENT ENROLLMENT. (None counted twice.)

	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>
Boarders.	44	60	104
Day Students.	3	8	11
Summer School.	6	22	28
Practice School. . . . .	..	..	33
	<hr/>	<hr/>	<hr/>
	53	90	176

CLASSIFIED BY TRADES AND INDUSTRIES.
(Each student spends half time in agriculture or industries.)

<i>Number Taking—</i>	<i>Male.</i>	<i>Female.</i>	<i>Total.</i>
Agriculture—Practical.	10	..	10
Agriculture—Class Study.	22	33	55
Blacksmithing.	13	..	13
Wheelwrighting.	1	..	1
Carpentry.	12	..	12
Printing.	9	..	9
Nature Study.	34	45	79
Sewing. . . . .	..	33	33
Dressmaking. . . . .	..	32	32
Housekeeping. . . . .	..	30	30
Cooking. . . . .	..	64	64
Laundrying. . . . .	..	60	60

LIVE STOCK SANITARY SECTION, MARYLAND STATE BOARD OF AGRICULTURE.

R. C. REED, *Director.*

By an Act of the Maryland General Assembly of 1916, the Live Stock Sanitary Board, formerly in charge of the enforcement of the live stock sanitary regulations of the State, was abolished, and the duties pertaining to this work were transferred to the Maryland State Board of Agriculture.

This Act was entitled:

AN ACT to repeal Sections 1 to 28, inclusive, and Sections 43 and 45 of Article 58, as the same are numbered and set forth in the Annotated Code of Maryland, as legalized by Chapter 21 of the Acts of 1912, and Chapter 16 of the Acts of 1914, of the General Assembly of Maryland, title "Live Stock," and to re-enact the same with amendments, and to add to said Article 58 of said Code one new section to follow Section 28, and to be known as Section 28A, providing for the transfer of the duties of the State Live Stock Sanitary Board to the Maryland State Board of Agriculture.

On July 7th, 1916, the State Board of Agriculture was organized, and on July 10th took charge of the office and available records of the Live Stock Sanitary Board, in the Garrett Building, in Baltimore, Maryland, retaining part of the office and field force as a temporary organization. On September 1st, 1916, the office equipment was moved to No. 815 Fidelity Building, Baltimore, Maryland, to an office adjoining that of the State Board of Agriculture, where much time was given to framing suitable regulations governing the importation of animals into the State; tuberculin testing; disinfecting of premises; regulation of hog cholera control, and other regulations and forms of permits. These regulations were carefully prepared, after consultation with officials of other States and with the Assistant Chief of the United States Bureau of Animal Industry. Before having these regulations and forms printed they were submitted to the above officials, and approved by them in letters containing many favorable comments.

When the regulations were ready for distribution, copies were mailed to the veterinarians registered in the State, and

to many known to be interested in the Live Stock Industry. Every effort is being made to interest the veterinarians of Maryland in this work, and many of them are now working in full co-operation.

The usual—and to be expected—opposition to certain new regulations, which differed from the methods formerly in force, was met with, but has been overcome in a great measure by a careful explanation showing that they were made in conformity with methods adopted by States recognized for their efficient work in the control of animal diseases.

Dr. Raymond C. Reed, formerly connected with the Veterinary Department of Cornell, and later with the Delaware Experiment Station, was on January 30th, 1917, appointed Dean of the Division of Animal Industry in the College, and placed in charge of the Live Stock Sanitary and Inspection Work.

TUBERCULOSIS.

Much thought has been given by the members of the Board, and the officials in charge, to devising means for the better protection from tuberculosis of the herds of the dairymen and breeders of cattle, and good work has been done along this line despite the fact that no special fund has been available for the compensation of owners for animals reacting to the tuberculin test and condemned for slaughter.

As the tuberculin test could not well be made compulsory, a reasonable allowance for condemned animals, to be paid from State funds, would be an incentive to dairymen and others to have their herds regularly tested for tuberculosis, and would help materially in the control of a disease that has reached considerable proportions—not only in this State but in the country at large.

Many cattle for breeding and dairy purposes are brought from other States to the Union Stock Yards, Baltimore, to be tested upon their arrival. The facilities were found to be entirely inadequate for the making of proper tests, but through the courtesy and co-operation of the owners of the yards a testing station has been established in a brick building within the confines of the yards. This building was equipped and opened on January 6th, 1917, since which time tests have been regularly conducted there, and the station has proved a convenience to dealers and the public in general.

In other portions of the State—adjacent to the boundary lines of other States—the facilities for the prevention of the importation of diseased animals are not what they should be, owing to the limited funds for effective patrol work. Where cattle are shipped in by rail or boat a reasonable record of such shipments becomes available; but where cattle are driven in on foot from adjacent States a strict watch cannot be maintained without a sufficient force employed for that purpose, although several Deputy Inspectors have done good work in suppressing this illegal traffic.

HOG CHOLERA.

This disease, which has caused in Maryland a great monetary loss to the owners of live stock, is, we are glad to say, being held in check by an active campaign conducted by the Federal authorities, in co-operation with the Extension Service of the State College of Agriculture and this department.

Experts from the United States Bureau of Animal Industry have been making a tour of the State, and with the assistance of the County Agents held meetings and organized the farmers for warfare against this disease, giving demonstrations of inoculation of hogs, and where outbreaks have occurred treating all hogs in that vicinity with anti-hog cholera serum. The expenses and salaries of the veterinarians from the United States Bureau of Animal Industry referred to above are being paid by this Board.

Scattered cases of anthrax, blackleg and other diseases more or less prevalent among cattle in this section, and several cases of glanders and cerebro-spinal meningitis in horses have been brought to our attention and handled promptly where possible to do so.

RABIES.

Cases of rabies were reported from time to time in several localities, all of which were promptly investigated by the Deputies in the counties, or members of the field force working from this office, with the result that on August 2nd, 1917, a section of the Third Election district of Baltimore county was placed under quarantine, and through advertisement in the local papers all persons in the area described were warned not to allow dogs to run at large. Later on the quarantine area

was enlarged to include the entire First and Second districts of the county, and also portions of Howard, Montgomery, Carroll and Frederick counties.

Two cows and one bull, owned by a farmer near Mt. Airy, Carroll county, died from the effects of rabies. With these exceptions, we know of no serious losses that have been sustained through this outbreak of the disease.

Much difficulty is found in enforcing the requirement that dogs be kept confined, owing to the large number of stray dogs and dogs owned by irresponsible persons. A quarantine against rabies can be effective only through the active co-operation of the local authorities in charge of the enforcement of the laws, and the public generally is earnestly requested to co-operate with these officials in every way.

DAIRY INSPECTION.

Under the Act (Chapter 391, Acts of 1916), creating the Board of Agriculture, broad powers of co-operation were provided, and with the hope of establishing uniform standards and regulations of Dairy Inspections throughout the State, conferences have been held with representatives of the State and City Boards of Health having to do with such matters. While all the representatives realize the great help such standardization will be to the Dairy Industry, and progress has been made, the final draft of the regulations has not yet been made. Until these new standards are completed this Board has thought best to make no organized effort to inspect dairies or dairy farms, and has confined its attention to only such cases as have been reported as needing immediate attention.

The regulation requiring the pasteurization of all skimmed milk and milk products returned to farmers by skimming stations, creameries, etc., to be used as food for domestic animals, has been mailed to the owners and operators of such plants. With a desire to promote, rather than discourage, this industry, it was thought best to have an expert confer with the operators of these various plants before any effort was made to compel rigid compliance with regulations. Accordingly, a competent official was secured from the United States Dairy Division, who, with a representative of this Board, has visited practically all of the creameries, cooling stations, etc., in the State.

This Board is glad to note the growing appreciation of Maryland's advantages as a dairy State, and hopes the present importation of dairy products from less favored States may soon become unnecessary.

While we feel effective work has been done in this department, progress has been necessarily slow, owing to an almost complete change in organization and regulations since the work was taken over by this Board.

The present organization of the department is as follows:

Dr. R. C. Reed.....	Chief, Animal Industry.
James B. George.....	Secretary Live Stock Sanitary Section.
Dr. Daniel R. Hoffman..	Veterinarian in Charge of Field Work.
Dr. Wm. L. Tremper.....	Assistant.
Dr. G. H. Grapp.....	Deputy Inspector, Port Deposit.
Dr. Glenn W. Horner.....	Deputy Inspector, Westminster.
Dr. C. E. Poe.....	Deputy Inspector, Hagerstown.
Dr. C. M. Grubb.....	Deputy Inspector, Rockville.
Dr. C. A. Matthew.....	Deputy Inspector, Cumberland.
Dr. Herbert Hoopes.....	Deputy Inspector, Belair.
Dr. R. V. Smith.....	Deputy Inspector, Frederick.
Dr. J. P. Aikenhead.....	Deputy Inspector, Easton.

EXPENDITURES.

Vouchers for the expenditures of the Live Stock Sanitary Section have been regularly forwarded each month to the State Comptroller, and up to the end of the fiscal year—September 30th, 1916—were paid from funds appropriated for live Stock Sanitary Work by the General Assembly of 1914.

These appropriations were under four heads, and the expenditures chargeable to each account for the months as specified below were as follows:

1916:

May—

Live Stock Sanitary Board Account.....	\$178.06
Dairy Appropriation.	52.50
State Veterinarian Account.	574.48
Board of Patrol Account.....	341.50
	—————\$1,146.54

June—

Live Stock Sanitary Board Account.....	\$258.55
Dairy Appropriation.	52.50
State Veterinarian Account.	668.78
Board of Patrol Account.....	365.70
	————— 1,345.53

July—

Live Stock Sanitary Board Account.....	\$173.35	
Dairy Appropriation.	53.75	
State Veterinarian Account.....	553.96	
Board of Patrol Account.....	7.50	
		<hr/> 788.56

August—

Live Stock Sanitary Board Account.....	\$100.35	
Dairy Appropriation.		
State Veterinarian Account.	408.53	
Board of Patrol Account.....	26.00	
		<hr/> 534.88

September—

Live Stock Sanitary Board Account.....	\$236.96	
Dairy Appropriation.		
State Veterinarian Account... ..	771.68	
Board of Patrol Account.....	405.87	
		<hr/> 1,414.51
		<hr/> \$5,230.02

An appropriation of \$25,000.00 made by the General Assembly of 1916 for Live Stock Sanitary Work became available October 1st, 1916, and vouchers for expenditures from that date to September 30th, 1917, as hereinafter listed, were forwarded to the Comptroller for payment:

Central office.	\$1,594.24
Salary Account, Central office.....	3,197.01
Equipment and Supplies, Central office.....	1,224.93
Field Work.	610.59
Field Work, salary account.....	3,583.27
Field Work, supplies.	889.44
Testing Station.	359.81
Special Hog Cholera Work.....	1,252.17
Appraisement of diseased animals for slaughter....	504.50
	<hr/>

Total Expenditures of the Live Stock Sanitary Section.....	\$13,215.96
--	-------------

SPECIAL HOG CHOLERA WORK.

I. K. ATHERTON, *Inspector in Charge.*

Summary of Hog Cholera Work conducted in Maryland by the Extension Service of the Maryland State College of Agriculture, State Board of Agriculture, and Bureau of Animal Industry, the U. S. Department of Agriculture co-operating:

The work, inaugurated March 15, 1917, has been introduced into eleven counties, as noted below:

Anne Arundel,	Montgomery,
Baltimore,	Prince George's,
Calvert,	St. Mary's,
Charles,	Somerset,
Dorchester,	Washington.
Harford,	

With the exception of some few postponements, the following two counties have been covered twice by education campaigns:

Anne Arundel,
Calvert.

The following six counties have been covered, more or less satisfactorily, by one campaign:

Charles,	Prince George's,
Dorchester,	St. Mary's,
Montgomery,	Somerset.

The following three counties have been only partially covered with the work:

Baltimore,
Harford,
Washington.

The following table gives the number of meetings held in each county, with total attendance:

Anne Arundel.	22	721
Baltimore.	13	357
Calvert.	10	195
Charles.	13	599
Dorchester.	18	404
Harford.	7	469
Montgomery.	22	842
Prince George's.	20	619
St. Mary's.	11	603
Somerset.	20	580
Washington.	4	120
	<hr/> 160	<hr/> 5,509
Average Attendance, 34½.		

The following is a list of the vaccination and post-mortem demonstrations given:

Anne Arundel.	16	161
Calvert.	6	54
Charles.	5	51
Dorchester.	12	190
Prince George's.	12	117
St. Mary's.	4	125
Somerset.	19	339
Washington.	3	26
	<hr/> 77	<hr/> 1,063
Average Attendance, 13 6/7.		

The following gives the number of organizations formed, with total membership, in each county:

Anne Arundel.	13	307
Baltimore.	11	276
Calvert.	6	90
Charles.	7	88
Dorchester.	7	101
Harford.	5	57
Montgomery—		
White.	14	180
Colored.	6	21

Prince George's—		
White.	11	122
Colored.	6	149
St. Mary's.	10	183
Somerset—		
White.	13	199
Colored.	3	51
Washington.	4	84
	<hr/>	<hr/>
	111	1,908
Average Membership, 17 1/5.		

Number of bulletins, circular, etc., sent to members of the several organizations:

Anne Arundel.	1,782
Baltimore.	338
Calvert.	468
Charles.	445
Dorchester.	674
Harford.	171
Montgomery.	982
Prince George's.	768
St. Mary's.	1,092
Somerset.	896
Washington.	588
	<hr/>
Total.	8,204

Number of farms visited in giving demonstrations, warnings regarding outbreaks of hog cholera, instructions relative to control of diseases, etc., 452.

Number of persons given instructions regarding hog cholera control, etc., other than at meetings and demonstrations, 1,195.

Number of persons taught how to administer the serum treatment (approximately), 700.

Number of miles traveled by members of this force in carrying on the work:

By rail.	3,981
By other conveyances.	16,614
	<hr/>
Total.	20,595

Regarding results accomplished, they can only be problematical, and any given might be open to discussion, but the following is offered for consideration:

In counties organized there were reported 18 outbreaks of hog cholera, and only in one instance, sick hogs being sold from this place, was there any evidence of the spread of the disease from the primary seat of infection.

In two counties, Harford and Montgomery, the work was introduced only after outbreaks of hog cholera were assuming such proportions to be deemed serious and emergency work necessary, and in both instances the introduction of the work and organization of the farmers were followed by cessation of the spread of the disease. In neither county was a new case reported.

Relative to any possible increase in the production of hogs because of the work, no data is available, and the time elapsed since the work was inaugurated is so short as to preclude any marked results. However, from the interest manifested in swine husbandry by the farmers and the reported demand for breeding stock, it is certain that, when the farmers begin to realize that hog raising can be made safe from the losses and disappointments of hog cholera, the great profits to be gained by raising hogs, and the improvement in the farms which will result from growing such crops, there will be a wonderful increase in the production of swine in Maryland.

FARM LABOR BUREAU.

W. M. HILLEGEIST, *Farm Labor Specialist.*

The work of this Bureau is under the co-operation of the Maryland Defense Council, Maryland State Board of Agriculture, Maryland Agricultural Extension Service, U. S. Employment Service, and U. S. Department of Agriculture.

On May 22, 1917, Mr. Rex E. Willard, Farm Help Specialist, was detailed by the Office of Farm Management, U. S. Department of Agriculture, to take up the work of organizing the Farm Labor Bureau, under the supervision of the Maryland Preparedness and Survey Commission. This body was succeeded by the Maryland Council of Defense, which was duly constituted a State organization by the special session of the Maryland Legislature called by Governor Emerson C. Harrington in the Spring of 1917.

The prime object of the organization of the Farm Labor Bureau was to determine ways and means for satisfactorily handling the farm labor situation in Maryland. The Council of Defense had the co-operation of the Maryland State Board of Agriculture, the Extension Service, Maryland State College of Agriculture, the Office of Farm Management, U. S. Department of Agriculture, and the U. S. Employment Service.

On July 23rd, 1917, General Gray, Chairman, Council of Defense, appointed, and the Executive Committee confirmed, the following committee and sub-committees to assume full charge of the agricultural and food conservation work in this State:

Agriculture and Food Conservation Committee, Dr. A. F. Woods, Chairman; Farm Labor Sub-Committee, Mr. W. H. Manss, Chairman; Canning Factory Labor Sub-Committee, Mr. C. C. Homer, Jr., Chairman; Food Conservation (land) Sub-Committee, Mr. R. F. Roberts, Chairman; Food Conservation (sea) Sub-Committee, Capt. W. H. Killian, Chairman.

MARYLAND AGRICULTURAL ARMY.

At the time of Mr. Willard's arrival in Baltimore, two units of the Maryland Agricultural Army were in operation: Company A, in charge of Captain E. J. O'Brien, and located at

Westminster, Carroll county, and Company B. in charge of Lieut. G. J. Yockel, and located at Galena, Kent county. These two companies had an initial enlistment of 100 men, 50 men to each company. Subsequently the Bureau enrolled 41 men, and sent them to the camps to take the places of men who for one reason or another severed their connection with the Army. These camps were established after there seemed to be a demand for such labor service. Company B was moved later to Kennedyville, Kent county, because those farmers at Galena who had signed a contract to keep the unit there for six months found they could not handle the proposition. Due to excessive overhead expenses which the farmers at Kennedyville could not meet, this camp was ordered to be discontinued by the Council of Defense on August 25, 1917. Early in the season the B. F. Shriver Co., Westminster, took over the full details of operating Company A, thereby releasing the Council of Defense from any supervision over it.

There are several advantages as well as several disadvantages in operating the Agricultural Army. These are taken from a report made by Mr. Willard.

ADVANTAGES.

1. The camp and military features of the army appeal to a class of men who would not otherwise render any farm service whatever.

2. From the standpoint of housing labor, the proposition is of great value to the farmer, inasmuch as a great many farmers do not have the facilities for caring for labor.

3. The presence of the army in the community is an incentive for increased production, for there is a visible supply of labor available. If groups of farmers could be assured of the labor next year, this would greatly stimulate production.

4. The presence of a unit has a very salutary effect upon the local labor, especially the colored population.

DISADVANTAGES.

1. Groups of 50 men are too large to be utilized continuously in the average farming community of Maryland. Even 25 men are too many at times in a community as prosperous as that of Kennedyville. However, if the basic needs for labor

were secured, it would be feasible to organize units to move from place to place as the crops seasons demand.

2. The overhead expense is too great in proportion to the service received therefor.

3. There is no authority for the enforcement of discipline.

4. There is no way of preventing desertion, *i. e.*, no penalty that may be inflicted legally.

5. There is no method whereby men can be compelled to perform the tasks assigned to them. In consequence, the army does not operate at but little more than 50 per cent. efficiency.

6. Only a small portion of those enlisting are experienced farm help, and are not as efficient as the local labor to be found in the farming communities.

7. It is very difficult to find men to act as commanders who have had the necessary farm experience and also the ability to handle men.

FARM LABOR BUREAU.

The farmer has decided misgivings about the ability of the labor procured in the city to do him any service. The fact that there exists prejudice and skepticism in his mind makes our work more difficult. The farmer hardly realizes that the conditions prevailing now are those attached to war, and not peace, times. He still is on the lookout for the experienced, month help. Such a class of labor is not to be found. In lieu thereof, the tiller of the soil must be made to consider employing men from the city, if he is to maintain at least a normal acreage of staple crops. The farmer should avail himself of every means whereby he may get labor to plant, care for and harvest an increased acreage, if this nation is to contribute the big part laid out for it by our President.

The general character of men who have applied to the Farm Labor Bureau for work is not as bad as the farmer would have one to believe. There are some men who when they apply for work have no idea of doing the square thing toward the Bureau or the farmer. In so far as we are able to know them, we dismiss such a type from our office. A majority of the applicants are suited for helping the farmer handle his crops, especially at harvest time. Those who are without experience would be able

to accomplish so much more if the farmer would take the time to show them how to perform some of the work. It takes patience, but then if it is a question of saving a crop, and through the crop help save our nation, why should the farmer object to instruct the labor? Perchance, the labor might develop into permanent, experienced farm help if he were shown some consideration. This labor is human, and should be susceptible of being touched by a kindly attitude displayed by the employer.

The labor expects and should receive comfortable sleeping quarters, and a satisfactory quantity and quality of wholesome food. Giving him these necessities will usually stimulate him to greater effort to succeed. We have had reports from some of the labor sent out that the accommodations and food were unsatisfactory. In some cases the farmer expected too much at first from the inexperienced labor. This attitude results in discouraging the laborer and he leaves the farm and returns to the city. There apparently is a great need for bringing these matters to the attention of the farmer in a clear manner. The farmer must alter his attitude if the agencies created to help him get labor are to do a service that is lasting and worth while. The fact of a shortage of farm labor has reached the stage where it is a crisis, and effort made in the one direction of finding enough labor to aid him in a full production of crops should be supported strongly by the farmer.

Of the men sent out this year, about 50 per cent. did fair work at least. The reports which have been received from those County Agents who have taken advantage of our facilities are encouraging. Our experience this season will greatly aid us next year, when probably the farm labor situation will be more critical. We have sent out, exclusive of the two camps of Agricultural Army men and 45 boys above 16 years of age to the Boys' Working Reserve, 865 men. A tabulated record of what kind of work these men were sent to perform and to what county they were sent is now given:

Recruited for Agricultural Army.....	141 men
Recruited for Boys' Working Reserve.....	45 boys
Total as per following tabulation.....	865 men

Grand Total..... 1,051 men and boys

RECAPITULATION.

	<i>Genl. Farm.</i>	<i>Harvesting.</i>	<i>Canning Corn.</i>	<i>Cutting Corn.</i>	<i>Husking Corn.</i>	<i>Peach P'k'g.</i>	<i>Apple P'k'g.</i>	<i>Pear P'k'g.</i>	<i>Tomato P'k'g.</i>	<i>Potato P'k'g.</i>	<i>TOTAL.</i>
Anne Arundel..	1	..	..	..	..	..	..	..	..	..	1
Baltimore.	68	17	..	80	3	..	..	..	..	4	172
Caroline.	9	..	..	..	..	..	..	..	..	..	9
Carroll.	30	17	..	67	..	..	..	..	..	..	114
Cecil.	17	20	35	37	..	..	..	..	2	..	111
Frederick. . . . .	..	..	..	3	..	..	..	..	..	..	3
Harford.	23	3	42	37	..	..	..	..	12	..	117
Howard.	37	31	..	38	9	..	..	..	..	..	115
Kent.	9	9	..	1	..	..	..	..	2	..	21
Montgomery. . . .	1	..	..	20	..	..	..	..	..	..	21
Pr. George's. . . .	5	..	..	..	..	..	..	..	..	..	5
Queen Anne's . . .	5	..	..	..	..	..	..	5	4	..	14
Talbot.	4	6	..	..	..	..	..	..	4	..	14
Washington. . . .	1	..	..	32	4	48	49	..	..	..	134
Wicomico.	8	1	..	..	..	..	..	..	..	..	9
Worcester.	2	3	..	..	..	..	..	..	..	..	5
	220	107	77	315	16	48	49	5	24	4	865

Allegany, Garrett, Charles, St. Mary's, Calvert, Dorchester and Somerset counties did not receive any labor from this office.

The total appropriations from the Council of Defense to defray the expenses of the Farm Labor Bureau amounted to \$6,695.00. This amount does not include the appropriations made to the Agricultural Army. \$2,573.67 was appropriated to close out the affairs of the Army, of which there remains a balance of \$633.46. A statement of appropriations, disburse-

ments, etc., of the Farm Labor Bureau through October 31, 1917, follows:

	<i>Disbursements.</i>	<i>Appropriations and Refunds.</i>
July 1 to August 15, 1917.....	\$2,608.14	\$3,052.83
August 16 to September 15, 1917..	2,282.15	2,671.78
September 16 to October 15, 1917.	1,235.87	1,430.67
October 16 to October 31, 1917...	171.95	105.36
	<hr/>	<hr/>
	\$6,298.11	\$7,260.64
		\$6,298.11
		<hr/>
Total Balance unexpended Oct. 31, 1917.....		\$962.53

The plan of operation followed by the Farm Labor Bureau included the County Agents in the organization. The farmer needing labor would try and find it in his neighborhood. If he was not successful, he would call on the County Agent for assistance. The County Agent looked further over the local field, and if there was not any labor to be found, he would get in touch with the Bureau. The farmer must give full particulars to the County Agent, which include the wages, kind of work to be done, approximate number of hours of work per day, whether white or colored help was desired, the conditions under which the labor would live, and every other item that might be of interest. With such data, the Bureau would strive to find such a man or men who would fit in with the proposition. It is well that the farmer do his best to anticipate his labor demands far enough in advance so as to give the County Agent and the Bureau added time. It is expected that the farmer will notify the County Agent if he secured his own labor after making application to the Agent.

At the beginning of our operation we tried the plan of using "scouters" whose business it was to go out and find the labor and direct it to the Farm Labor Bureau. Not much success resulted from this plan. We then used the newspapers for advertising for men to work at particular kind of a job for so much money per day with board and lodging. This means of securing labor was much more successful. The labor now to be had prefers to work for a daily wage with board and lodging, rather than by piecework. It is believed the farmers would

save some money if they could get the labor to accept piecework propositions, but such arrangements do not appeal to the labor.

The farmer must refund to the Farm Labor Bureau, through the County Agent, the cost of transportation which we advance in getting the labor from our office to his farm. This transportation cost includes every item of expense legitimately incurred in sending the men to the farmer. Where five or more men are to go to one community, it is well for the farmer or farmers to agree to let us send one of our shippers with the crowd, to insure their getting to the proper place. The shipper's expenses must also be paid by the farmer or prorated among any number of farmers who get the labor. There have been cases when the labor did not reach his destination after he was put on the train alone. To encourage the labor to leave the city and go to the country, the farmer is asked to bear the cost of transportation of the labor to be employed by the day, if the labor remains at least two weeks, or until the job is finished, if it does not take that long. Where a man is employed by the month, it is well for the farmer to stand the expense of getting him to the farm, if he stays at least a month.

The farmer must know that, with the scale of wages everywhere higher than ever because of war conditions, it is not to be hoped that men in the city will go to the country when they are offered the wages of a few years ago. There is not such a thing in Maryland as a standard day or month wage, even considering the fact from a community standpoint. Farmers in some sections of Maryland are willing to pay \$25.00 to \$35.00, and even more sometimes, with board and lodging, for experienced, single, month men. For married men the wage will be higher. In other counties, as low as \$10.00 per month has been offered for young, experienced men. One case stands out prominently, and is worth recording. A farmer applied here for a young man to take the place of his son who was then employed at an army cantonment as a carpenter, making \$6.88 per day and time and one-half for Saturday afternoon and Sunday. This farmer told us he would be willing to pay \$10.00 per month and board for such a man. In some localities the rate of pay during harvest was \$2.00 per day with board, while in other places only \$1.00 and \$1.50 per day were offered. Some farmers expect a man to work by the day for month wages. This non-uniformity of wages makes it hard to get men to leave the city. They prefer to stay where there is greater certainty for higher wages.

Beside the direct benefits derived from the operation of the Farm Labor Bureau, there are two indirect results which are worth much. Where the farmer had a knowledge of the existence of the Bureau, and was willing to give us a trial in furnishing labor, that farmer might be encouraged to plant a larger acreage, hoping that next year he would again be able to find help here. The fact that there was such an organization as the Farm Labor Bureau, made the local labor change its attitude toward the work in the neighborhood. One of the Eastern Shore counties sent in a request for 125 men to harvest the early potato crop. This was quite a large demand, and it was deemed advisable to dispatch one of our men to that section and make an investigation. Our representative brought back word that there was no need for sending labor there. The local (colored) labor having been advised that help was coming from Baltimore, got to work, and instead of receiving 25 cents per barrel for "picking" potatoes, decided to do the same service for 12½ cents per barrel, which was the price offered to the Baltimore labor.

We do not have any reports from the County Agents telling of a crop loss, other than what usually occurs due to changes in weather conditions and gluts in the markets. The losses due to a faulty distribution system must not be confused with those losses which are the direct result from a shortage of labor. Maryland does not know what a surplus of labor means.

Mr. Willard was recalled by the Office of Farm Management on August 22, 1917, and Mr. W. M. Hillegeist succeeded him as the head of the Bureau, and received his appointment as Farm Help Specialist for Maryland and Delaware from the Department of Agriculture, Office of Farm Management, Tuesday, October 23, 1917, to take effect from October 1, 1917.

Report of STATE TOBACCO WAREHOUSES.

WM. J. FRERE, *Chief Inspector.*

When the present Chief Inspector took charge of the State Tobacco Warehouses in March, 1916, he found conditions such that the Fire Underwriters had added 27c. per \$100.00 to the insurance rate. By making the needed repairs and clearing the buildings of an accumulation of waste material the fire insurance was reduced to the normal rate.

The necessary repairs, unpaid bills, claims for short weights and lost hogsheads of tobacco amounted to..\$2,164.74 all of which is properly chargeable to the previous administration.

There was on storage March 11th, 1916, 5,477 hogsheads of tobacco, which, at \$2.00 each, amounts to \$10,954.00, from which should be deducted the above mentioned \$2,164.74, leaving \$8,789.26 as the earned receipts of the warehouses on that date.

In the eighteen months to October 1st, 1917, the State Tobacco Warehouses have received 34,936 hogsheads of tobacco, of which 24,584 hogsheads have been delivered, leaving now in storage 10,352 hogsheads, which, at \$2.00 each, will produce receipts of \$20,704.00, or a net earning for the eighteen months of \$11,914.74.

Labor conditions have made necessary an increase in the salaries and pay roll of the warehouses amounting to more than \$6,000.00. The cost of all materials used in the repacking of the tobacco has increased quite seventy-five per cent.

Tobacco in the last few years has gradually increased in price from an average of 6c. to 12c. per pound to an average of 12c. to 30c. per pound; this, of course, has been brought about by war conditions to a great extent, but domestic manufacturers are fast learning the value of our tobacco, and it is safe to assume that some part of this increase in price is due to

the careful inspection and grading work of the State Warehouse management.

The work of the warehouses is now organized with a capable working foreman in charge of each department, and efficiency and attention to duty are required of each employee.

We believe the present management has secured the confidence of and should receive the hearty assistance of every tobacco grower of the State; these warehouses are his and are operated for his benefit.

Much has been done, but at least a part of the warehouse receipts could well be expended in the further improvement of the crops and the development of the tobacco industry of Maryland.

SUMMARY OF RECEIPTS AND EXPENDITURES OF THE MARY-
LAND STATE COLLEGE OF AGRICULTURE, EXPERIMENT
STATION, AND EXTENSION SERVICE FOR THE
YEAR ENDING JUNE 30TH. 1917.

	<i>Expenditures,</i> 1916-17.	<i>Receipts,</i> 1916-17.	<i>Debit Balance,</i> June 30, 1917.	<i>Credit Balance,</i> June 30, 1917.
College Account.	\$159,353.46	\$161,031.93	.....	\$1,678.47
Adams Fund.	15,006.43	15,006.44	.....	.01
Hatch Fund.	15,372.74	15,389.75	.....	17.01
Experiment Station.	27,570.27	25,954.73	\$1,615.54	.....
Farm Account.	10,802.71	12,207.87	.....	1,405.16
Horticultural Acct.—Exp. Station.	4,224.61	4,338.59	.....	13.98
Biological Laboratory.	6,514.77	9,853.10	.....	3,338.33
*Soil Fund.	†17,720.17	26,965.78	.....	9,245.62
Seed Inspection.	5,079.49	7,395.11	.....	2,315.62
Ridgely Farm.	5,806.77	6,212.81	.....	406.04
General Extension.	4,221.23	3,130.08	1,091.15	.....
State Horticultural Fund.	8,284.94	7,215.03	1,069.91	.....
County Demonstration.	12,847.57	13,080.21	.....	232.64
State Demonstration.	3,379.15	4,257.98	.....	878.83
Farmers' Institute.	6,107.72	6,142.59	.....	34.87
Federal Smith-Lever Fund.	24,545.77	24,590.45	.....	44.68
State Smith-Lever Fund.	14,124.86	8,918.67	5,206.19	.....
Eastern Branch Maintenance.	11,474.86	11,793.81	.....	318.95
Totals.	\$352,537.52	\$363,484.93	\$8,982.79	\$19,930.20

Total Receipts.	\$363,484.93
Total Disbursements.	352,537.52
Excess of Receipts.	<u>\$10,947.41</u>
Credit Balance.	\$19,930.20
Debit Balance.	8,982.79
Net Credit Balance June 30th, 1917.	<u>\$10,947.41</u>
*Loan to College Fund, May 28th, 1917.	\$9,000.00
†Loan to College Fund, June 29th, 1917.	4,000.00
	<u>\$13,000.00</u>

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS OF
THE MARYLAND STATE COLLEGE OF AGRICULTURE,
EXPERIMENT STATION, AND EXTENSION
SERVICE FOR THE YEAR ENDING
JUNE 30TH, 1917.

	Disbursements, 1916-17.	Receipts, 1916-17.	Debit Balance, June 30, 1917.	Credit Balance, June 30, 1917.
<i>College Account—</i>				
Balance, June 30th, 1916.....		\$1,901.78		
U. S. Appropriation.		40,000.00		
State of Maryland Appropriation.		18,750.00		
Interest on Land Script.		6,147.18		
Student Fees—Regular.		37,598.40		
Student Fees—Summer School.		2,019.50		
Boarders.		2,158.09		
Student Examinations & Materials.		159.41		
Fertilizer Licenses.		21,190.51		
Sundry sales, rebates, int. & rents.		2,161.56		
Loan from Soil Fund.		13,000.00		
Sale of Agricultural Books.		945.50		
College Disbursements.	\$146,920.83			
Balance, College Acct.			\$888.90	
<i>State Board of Agriculture—</i>				
Executive Expenses.		3,125.00		
State Board Disbursements.	590.47			
Balance, Executive Expenses.				\$2,534.53

Eastern Branch Account—

U. S. Appropriation. . . . .	.....	10,000.00	.....	.....
State of Maryland Appropriation. . . . .	.....	1,875.00	.....	.....
Eastern Branch Disbursements.	11,842.16	.....	.....	.....
	<u>\$159,353.46</u>	<u>\$161,031.93</u>	<u>\$888.90</u>	<u>\$2,567.37</u>
Net Credit Balance, June 30th, 1917.	.....	.....	.....	<u>\$1,678.47</u>

Adams Fund—

Balance, June 30th, 1916. . . . .	.....	\$527.51	.....	.....
U. S. Appropriation. . . . .	.....	14,478.93	.....	.....
Disbursements, 1916-1917.	\$15,006.43	.....	.....	.....
Balance, June 30th, 1917. . . . .	.....	.....	.....	<u>\$ .01</u>
	<u>\$15,006.43</u>	<u>\$15,006.44</u>	<u>.....</u>	<u>\$.01</u>

Hatch Fund—

Balance, June 30th, 1916.	\$331.19	.....	.....	.....
U. S. Appropriation. . . . .	.....	\$15,389.75	.....	.....
Disbursements, 1916-17.	15,041.55	.....	.....	.....
Balance, June 30th, 1917. . . . .	.....	.....	.....	<u>\$17.01</u>
	<u>\$15,372.74</u>	<u>\$15,389.75</u>	<u>.....</u>	<u>\$17.01</u>

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS OF
THE MARYLAND STATE COLLEGE OF AGRICULTURE,
EXPERIMENT STATION, AND EXTENSION
SERVICE FOR THE YEAR ENDING
JUNE 30TH, 1917—*Cont'd.*

	Disbursements, 1916-17.	Receipts, 1916-17.	Debit Balance, June 30, 1917.	Credit Balance, June 30, 1917.
<i>Experiment Station—</i>				
Balance, June 30th, 1916.....		\$216.01	.....	.....
Receipts, 1916-1917.		25,738.72	.....	.....
Disbursements, 1916-1917.	\$27,570.27	.....	.....	.....
Balance, June 30th, 1916.....		.....	\$1,615.54	.....
	<u>\$27,570.27</u>	<u>\$25,954.73</u>	<u>\$1,615.54</u>	<u>.....</u>
<i>Farm Account—</i>				
Balance, June 30th, 1917.....	\$226.98	.....	.....	.....
Receipts, 1916-1917.		\$12,207.87	.....	.....
Disbursements, 1916-1917.	10,575.73	.....	.....	.....
Balance, June 30th, 1917.....		.....	.....	\$1,405.16
	<u>\$10,802.71</u>	<u>\$12,207.87</u>	<u>.....</u>	<u>\$1,405.16</u>

Horticultural Fund—Exp. Station—

Balance, June 30th, 1916.....			.....	.....
Receipts, 1916-1917. . . . .			.....	.....
Disbursements, 1916-1917.	\$4,324.61		.....	.....
Balance, June 30th, 1917.....			.....	\$13.98
	\$4,324.61		.....	\$13.98

Biological Laboratory—

Balance, June 30th, 1916.....			.....	.....
Receipts, 1916-1917. . . . .			.....	.....
Disbursements, 1916-1917.	\$6,514.77		.....	.....
Balance, June 30th, 1917.....			.....	\$3,338.33
	\$6,514.77		.....	\$3,338.33

Soil Fund—

Balance, June 30th, 1916.....			.....	.....
Receipts, 1916-1917. . . . .			.....	.....
Disbursements, 1916-1917.	\$17,720.17		.....	.....
Balance, June 30th, 1917.....			.....	*\$9,245.61
	\$17,720.17		.....	\$9,245.61

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS OF
THE MARYLAND STATE COLLEGE OF AGRICULTURE,
EXPERIMENT STATION, AND EXTENSION
SERVICE FOR THE YEAR ENDING
JUNE 30TH, 1917—*Cont'd.*

	<i>Disbursements,</i> 1916-17.	<i>Receipts,</i> 1916-17.	<i>Debit Balance,</i> June 30, 1917.	<i>Credit Balance,</i> June 30, 1917.
<i>Seed Inspection—</i>				
Balance, June 30th, 1916.....		\$520.11	.....	.....
Receipts, 1916-1917.		6,875.00	.....	.....
Disbursements.	\$5,079.49	.....	.....	.....
Balance, June 30th, 1917.....		.....	.....	\$2,315.62
	<u>\$5,079.49</u>	<u>\$7,395.11</u>	<u>.....</u>	<u>\$2,315.62</u>
<i>Ridgely Farm—</i>				
Balance, June 30th, 1916.....		\$195.14	.....	.....
Receipts, 1916-1917.		6,017.67	.....	.....
Disbursements, 1916-1917.	\$5,806.77	.....	.....	.....
Balance, June 30th, 1917.....		.....	.....	\$406.04
	<u>\$5,806.77</u>	<u>\$6,212.81</u>	<u>.....</u>	<u>\$406.04</u>

General Extension—

Receipts, 1916-1917. . . . .	.....	\$3,130.08	.....
Disbursements, 1916-1917.	\$4,221.23	.....	.....
Balance, June 30th, 1917. . . . .	.....	\$1,091.15	.....

State Horticultural Fund—

Balance, June 30th, 1916.	\$495.66	.....	.....
Receipts, 1916-1917. . . . .	.....	\$7,215.03	.....
Disbursements, 1916-1917.	\$7,789.28	.....	.....
Balance, June 30th, 1917. . . . .	.....	\$1,069.91	.....

County Demonstration—

Receipts, 1916-1917. . . . .	.....	\$7,215.03	.....
Disbursements, 1916-1917.	\$12,847.57	.....	.....
Balance, June 30th, 1917. . . . .	.....	\$1,069.91	.....
		\$13,080.21	.....
		.....	\$232.64
		\$13,080.21	\$232.64

State Demonstration—

Balance, June 30th, 1916. . . . .	.....	\$346.12	.....
Receipts, 1916-1917. . . . .	.....	3,911.86	.....
Disbursements, 1916-1917.	\$3,379.15	.....	.....
Balance, June 30th, 1917. . . . .	.....	.....	\$878.83
		\$4,257.98	\$878.83

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS OF
THE MARYLAND STATE COLLEGE OF AGRICULTURE,
EXPERIMENT STATION, AND EXTENSION
SERVICE FOR THE YEAR ENDING
JUNE 30TH, 1917—*Cont'd.*

	Disbursements, 1916-17.	Receipts, 1916-17.	Debit Balance, June 30, 1917.	Credit Balance, June 30, 1917.
<i>Farmers' Institute—</i>				
Balance, June 30th, 1916.....	.....	\$129.43	.....	.....
Receipts, 1916-1917. . . . .	.....	6,013.16	.....	.....
Disbursements, 1916-1917.	\$6,107.72	.....	.....	.....
Balance, June 30th, 1917.....	.....	.....	.....	\$34.87
	<u>\$6,107.72</u>	<u>\$6,142.59</u>	<u>.....</u>	<u>\$34.87</u>
<i>Federal Smith-Lever Fund—</i>				
Receipts, 1916-1917. . . . .	.....	\$24,590.45	.....	.....
Disbursements, 1916-1917.	\$24,545.77	.....	.....	.....
Balance, June 30th, 1917.....	.....	.....	.....	\$44.68
	<u>\$24,545.77</u>	<u>\$24,590.45</u>	<u>.....</u>	<u>\$44.68</u>

SUMMARY OF RECEIPTS AND DISBURSEMENTS OF THE
MARYLAND STATE COLLEGE OF AGRICULTURE, EXPERI-
MENT STATION, AND EXTENSION SERVICE FOR THE
MONTHS OF JULY, AUGUST & SEPTEMBER, 1917.

	<i>Expenditures,</i>	<i>Receipts,</i>	<i>Debit Balance, Sept. 30, 1917.</i>	<i>Credit Balance, Sept. 30, 1917.</i>
College Account.	\$27,553.75	\$22,618.63	*\$4,935.12	.....
Morrill and Nelson Funds.....	12,499.96	50,000.00	.....	\$37,500.04
State Emergency.	10,817.51	18,205.00	.....	7,387.49
Special Seed Fund.	4,512.60	4,600.20	.....	87.60
Adams Fund.	3,725.46	3,750.01	.....	24.55
Hatch Fund.	3,475.69	3,777.31	.....	301.62
Experiment Station.	9,038.92	9,375.00	.....	336.08
Farm Account.	4,622.96	4,670.48	.....	47.52
Horticultural Fund—Exp. Station.	13.98	14.16	.....	.18
Biological Laboratory.	3,989.53	6,915.93	.....	2,926.40
Soil Fund.	2,337.32	9,245.61	.....	†6,908.29
Seed Inspection.	1,149.73	4,190.62	.....	3,040.89
Ridgely Farm.	1,315.19	2,457.44	.....	1,142.25
General Extension.	2,642.15	1,875.00	767.15	.....
State Horticultural Account.	2,945.91	3,008.02	.....	62.11
County Demonstration.	9,155.50	6,382.57	2,772.93	.....
State Demonstration.	878.83	878.83	.....	.....
Farmers' Institute.	15.00	35.04	.....	20.04
Federal Smith-Lever Fund.	7,917.93	15,620.57	.....	7,702.64

State Smith-Lever Fund.	9,366.54	5,455.93	3,910.61	.....
Eastern Branch Maintenance.	2,738.32	4,722.17	.....	1,983.85
Totals.	<u>\$120,712.78</u>	<u>\$177,798.52</u>	<u>\$12,385.81</u>	<u>\$69,471.55</u>
Total Receipts.	\$177,798.52			
Total Disbursements.	120,712.78			
Excess of Receipts.	<u>\$57,085.74</u>			
Credit Balance.	\$69,471.55			
Debit Balance.	12,385.81			
Net Credit Balance.	<u>\$57,085.74</u>			
*Cash overdraft on College Fund.	\$4,935.12			
†Loan from Soil Fund.	13,000.00			
Unpaid bills, Oct. 1st (estimated)	2,500.00			
College Deficit, Oct. 1st.	<u>\$20,435.12</u>			

STATEMENT OF THE CASH RECEIPTS AND DISBURSEMENTS
OF THE MARYLAND STATE COLLEGE OF AGRICULTURE,
EXPERIMENT STATION AND EXTENSION SERVICE
FOR THE MONTHS OF JULY, AUGUST AND SEP-
TEMBER, 1917—TO BRING REPORT FROM
CLOSE OF COLLEGE FISCAL YEAR UP
TO CLOSE OF STATE FISCAL YEAR,
SEPTEMBER 30TH, 1917.

	Disbursements, 6/30 to 9/30, 1917.	Receipts, 6/30 to 9/30, 1917.	Debit Balance, Sept. 30th, 1917.	Credit Balance, Sept. 30th, 1917.
<i>College Account—</i>				
Balance, June 30th, 1917.....	.....	\$1,678.47	.....	.....
July, 1917, State Appro., Bal. due..	.....	15,174.87	.....	.....
July, 1917, Cash Receipts.....	.....	2,095.46	.....	.....
August, 1917, Cash Receipts.....	.....	1,767.95	.....	.....
September, 1917, Cash Receipts.....	.....	1,647.60	.....	.....
Interest to Sept. 30th, 1917.....	.....	254.28	.....	.....
Disbursements:				
July, 1917.	\$11,788.04	.....	.....	.....
August, 1917.	7,594.34	.....	.....	.....
September, 1917.	8,171.37	.....	.....	.....
Balance, Sept. 30th, 1917.....	.....	.....	\$4,935.12	.....
	<u>\$27,553.75</u>	<u>\$22,618.63</u>	<u>\$4,935.12</u>	<u>.....</u>

Morrill and Nelson Accounts—

July, 1917, U. S. Appropriations.....					
Disbursements:					
July, 1917.	\$3,333.32				
August, 1917.	3,333.32				
September, 1917.	3,333.32				
September, 1917, Trf. to East. Br..	2,500.00				
Balance, Sept. 30th, 1917.					\$37,500.04
					<hr/>
	\$12,499.96				\$37,500.04
					<hr/>

State Emergency Account—

August, 1917.					
September, 1917.					
Disbursements:					
August, 1917.	\$4,218.70				
September, 1917.	6,598.81				
Balance, Sept. 30th, 1917.					\$7,387.49
					<hr/>
	\$10,817.51				\$7,387.49
					<hr/>

Special Seed Account —

September, 1917.					
Disbursements, Sept., 1917.	\$4,512.60				
Balance, Sept. 30th, 1917.					\$87.60
					<hr/>
	\$4,512.60				\$87.60
					<hr/>

STATEMENT OF THE CASH RECEIPTS AND DISBURSEMENTS
OF THE MARYLAND STATE COLLEGE OF AGRICULTURE,
ETC., FOR MONTHS OF JULY, AUGUST, ETC.—*Cont'd.*

	Disbursements, 6/30 to 9/30, 1917.	Receipts, 6/30 to 9/30, 1917.	Debit Balance, Sept. 30th, 1917.	Credit Balance, Sept. 30th, 1917.
<i>Adams Fund—</i>				
Balance, July 30th, 1917.....	.....	\$ .01	.....	.....
July, 1917, U. S. Appropriation.....	.....	3,750.00	.....	.....
Disbursements:				
July, 1917.	\$1,283.10	.....	.....	.....
August, 1917.	1,028.33	.....	.....	.....
September, 1917.	1,414.03	.....	.....	.....
Balance, Sept. 30th, 1917. . . . .	.....	.....	.....	\$24.55
	<u>\$3,725.46</u>	<u>\$3,750.01</u>	<u>.....</u>	<u>\$24.55</u>
<i>Hatch Fund—</i>				
Balance, June 30th, 1917. . . . .	.....	\$17.01	.....	.....
July, 1917, U. S. Appropriation. . . . .	.....	3,750.00	.....	.....
Interest, Sept., 1917. . . . .	.....	10.30	.....	.....
Disbursements:				
July, 1917.	\$1,080.00	.....	.....	.....
August, 1917.	860.00	.....	.....	.....
September, 1917.	1,535.69	.....	.....	.....
Balance, Sept. 30th, 1917. . . . .	.....	.....	.....	\$301.62
	<u>\$3,475.69</u>	<u>\$3,777.31</u>	<u>.....</u>	<u>\$301.62</u>

Experiment Station—

Balance, June 30th, 1917.....	\$1,615.54	.....	.....
July, 1917, Bal. State Appropriation. Disbursements:	.....	\$9,375.00	.....
July, 1917.	5,111.71	.....	.....
August, 1917.	1,338.97	.....	.....
September, 1917.	972.70	.....	.....
Balance, Sept. 30th, 1917.....	.....	.....	\$336.08
	\$9,038.92	\$9,375.00	\$336.08

Farm Account—

Balance, June 30th, 1917.....	.....	.....	.....
July, 1917, Farm Sales.....	.....	\$909.55	.....
August, 1917, Farm Sales.....	.....	1,477.84	.....
September, 1917, Farm Sales.....	.....	307.40	.....
September, 1917, Farm Sales.....	\$1,928.00	1,928.00	.....
September, 1917, Interest .....	.....	47.69	.....
Disbursements:	.....	.....	.....
July, 1917.	1,234.21	.....	.....
August, 1917.	1,491.44	.....	.....
September, 1917.	1,897.31	.....	.....
Balance, Sept. 30th, 1917.....	.....	.....	\$47.52
	\$4,622.96	\$4,670.48	\$47.52

STATEMENT OF THE CASH RECEIPTS AND DISBURSEMENTS
OF THE MARYLAND STATE COLLEGE OF AGRICULTURE,
ETC., FOR MONTHS OF JULY, AUGUST, ETC.— *Con'd.*

	Disbursements, 6/30 to 9/30, 1917.	Receipts, 6/30 to 9/30, 1917.	Debit Balance, Sept. 30th, 1917.	Credit Balance, Sept. 30th, 1917.
<i>Horticultural Fund—Exp. Station—</i>				
Balance, June 30th, 1917.....	.....	\$13.98	.....	.....
Interest, Sept., 1917.....	.....	.18	.....	.....
Disbursements, September, 1917.....	\$13.98	.....	.....	.....
Balance, Sept. 30th, 1917.....	.....	.....	.....	\$18
	\$13.98	\$14.16	.....	\$18
<i>Biological Laboratory—</i>				
Balance, June 30th, 1917.....	.....	\$3,338.33	.....	.....
July, 1917, Bal. State Appropriation..	.....	1,875.00	.....	.....
July, 1917, Serum Sales.....	.....	1,081.46	.....	.....
September, 1917, Serum Sales.....	.....	621.14	.....	.....
Disbursements:				
July, 1917.	\$1,483.70	.....	.....	.....
August, 1917.	270.00	.....	.....	.....
September, 1917.	2,235.83	.....	.....	.....
Balance, Sept. 30th, 1917.....	.....	.....	.....	\$2,926.40
	\$3,989.53	\$6,915.93	.....	\$2,926.40

Soil Fund—

Balance, June 30th, 1917.....			
Disbursements:		\$9,245.61	
July, 1917.	\$802.55		
August, 1917.	150.00		
September, 1917.	1,384.77		
Balance, Sept. 30th, 1917.....			\$6,908.29
	\$2,337.32	\$9,245.61	\$6,908.29

Seed Inspection—

Balance, June 30th, 1917.....			
July, 1917, Bal. State Appropriation.		\$2,315.62	
Disbursements:		1,875.00	
July, 1917.	\$506.86		
August, 1917.	323.33		
September, 1917.	319.54		
Balance, Sept. 30th, 1917.....			\$3,040.89
	\$1,149.73	\$4,190.62	\$3,040.89

Ridgely Farm—

Balance, June 30th, 1917.....			
July, 1917, Bal. State Appropriation.		\$406.04	
August, 1917, Sales.		1,875.00	
September, 1917, Interest		167.62	
		8.78	

STATEMENT OF THE CASH RECEIPTS AND DISBURSEMENTS
OF THE MARYLAND STATE COLLEGE OF AGRICULTURE,
ETC., FOR MONTHS OF JULY, AUGUST, ETC.— *Cont'd.*

	Disbursements, 6/30 to 9/30, 1917.	Receipts, 6/30 to 9/30, 1917.	Debit Balance, Sept. 30th, 1917.	Credit Balance, Sept. 30th, 1917.
Disbursements:				
July, 1917.	\$333.77	.....	.....	.....
August, 1917.	276.12	.....	.....	.....
September, 1917.	705.30	.....	.....	.....
Balance, Sept. 30th, 1917. . . . .	.....	.....	.....	\$1,142.25
	\$1,315.19	\$2,457.44	.....	\$1,142.25
<i>General Extension—</i>				
Balance, June 30th, 1917.	\$1,091.15	.....	.....	.....
July, 1917, Bal. State Appropriation. . . . .	.....	\$1,875.00	.....	.....
Disbursements:				
July, 1917.	473.68	.....	.....	.....
August, 1917.	821.00	.....	.....	.....
September, 1917.	256.32	.....	.....	.....
Balance, Sept. 30th, 1917. . . . .	.....	.....	\$767.15	.....
	\$2,642.15	\$1,875.00	\$767.15	.....

State Horticultural Account—

Balance, June 30th, 1917.....	\$1,069.91	.....	.....
July, 1917, Bal. State Appropriation.	.....	\$3,008.02	.....
Disbursements:			
July, 1917.	433.33	.....	.....
August, 1917.	747.13	.....	.....
September, 1917.	695.54	.....	.....
Balance, Sept. 30th, 1917.....	.....	.....	\$62.11
			<hr/>
	\$2,945.91	\$3,008.02	\$62.11
			<hr/>

County Demonstration—

Balance, June 30th, 1917.....	.....	.....	.....
August, 1917. . . . .	.....	\$232.64	.....
September, 1917. . . . .	.....	3,211.83	.....
Interest, Sept., 1917. . . . .	.....	2,934.64	.....
Disbursements:			
August, 1917.	\$6,146.47	.....	.....
September, 1917.	3,009.03	.....	.....
Balance, Sept. 30th, 1917.....	.....	\$2,772.93	.....
			<hr/>
	\$9,155.50	\$6,382.57	\$2,772.93
			<hr/>

State Demonstration—

Balance, June 30th, 1917.....	.....	.....	.....
Disbursements:			
July, 1917.	\$92.45	.....	.....
August, 1917.	75.84	.....	.....
September, 1917.	710.54	.....	.....
			<hr/>
	\$878.83	\$878.83	.....
			<hr/>

STATEMENT OF THE CASH RECEIPTS AND DISBURSEMENTS
OF THE MARYLAND STATE COLLEGE OF AGRICULTURE,
ETC., FOR MONTHS OF JULY, AUGUST, ETC.—*Cont'd.*

	Disbursements, 6/30 to 9/30, 1917.	Receipts, 6/30 to 9/30, 1917.	Debit Balance, Sept. 30th, 1917.	Credit Balance, Sept. 30th, 1917.
<i>Farmers' Institute—</i>				
Balance, June 30th, 1917.....		\$34.87	.....	.....
Interest, September, 1917.....		.17	.....	.....
Disbursements:				
August, 1917.....	\$15.00	.....	.....	.....
Balance, Sept. 30th, 1917.....		.....	.....	\$20.04
	<hr/>	<hr/>	<hr/>	<hr/>
	\$15.00	\$35.04	.....	\$20.04
<i>Federal Smith-Lever Fund—</i>				
Balance, June 30th, 1917.....			.....	.....
August, 1917, Transfer.....		\$44.68	.....	.....
September, 1917, U. S. Appropriation.		242.41	.....	.....
September, 1917, Interest.....		15,328.97	.....	.....
Disbursements:		4.51	.....	.....
July, 1917.....	\$2,551.72	.....	.....	.....
August, 1917.....	2,693.32	.....	.....	.....
September, 1917.....	2,672.89	.....	.....	.....
Balance, Sept. 30th, 1917.....		.....	.....	\$7,702.64
	<hr/>	<hr/>	<hr/>	<hr/>
	\$7,917.93	\$15,620.57	.....	\$7,702.64

State Smith-Lever Fund—

Balance, June 30th, 1917.....	\$5,206.19	.....	.....
July, 1917, State Appropriation.....	.....	\$5,326.13	.....
September, 1917, Transfer.....	.....	129.80	.....
Disbursements:			
July, 1917.....	\$746.66	.....	.....
August, 1917.....	1,529.77	.....	.....
September, 1917.....	1,557.55	.....	.....
September, 1917 (correcting error made by Mr. Reik in June 30th Balance).....	326.37	.....	.....
Balance, Sept. 30th, 1917.....	.....	\$3,910.61	.....
	<hr/>	<hr/>	<hr/>
	\$9,366.54	\$5,455.93	\$3,910.61
	<hr/>	<hr/>	<hr/>

Eastern Branch Maintenance—

Balance, June 30th, 1917.....	.....	.....	.....
July, 1917.....	.....	\$318.95	.....
August, 1917.....	.....	1,875.00	.....
Sept., 1917, Trans. from Morrill & Nelson.....	.....	28.22	.....
Disbursements:			
July, 1917.....	.....	2,500.00	.....
August, 1917.....	\$1,158.00	.....	.....
September, 1917.....	391.06	.....	.....
Balance, Sept. 30th, 1917.....	1,189.26	.....	.....
	<hr/>	<hr/>	<hr/>
	\$2,738.32	\$4,722.17	\$1,983.85
	<hr/>	<hr/>	<hr/>

NEEDS FOR THE BIENNIUM.

In submitting the biennial estimates to the Assembly of 1918, the Board of Agriculture and Trustees have been guided by the following considerations:

1. The appropriations for the last biennium were held down as low as possible pending the process of reorganization.
2. The reorganization has now been completed as far as possible with the funds available, but the money available is not sufficient to put the institution in proper working shape to compare with other institutions with similar responsibilities.
3. The great war in progress has called upon the various departments under the Board for greatly increased work, the need for which will be even greater after the war closes.
4. The problems of reconstruction after the war and the rapidly increasing demands upon agriculture for larger and more efficient production and distribution make it necessary to increase the staff and equipment of the College, the Station, and Extension Service. The great importance of live stock in the development of our agriculture also requires increased attention to live stock sanitary work, hog cholera control, etc.
5. The greatly increased cost of living and the high wages paid in industry makes it necessary to provide some increase in salaries and wages. It is impossible to keep or secure competent help for the wages now paid.
6. The greatly increased cost of supplies and equipment of all kinds, and the fact that the College is not properly equipped for the work in progress, requires an increase for these purposes.
7. The fact that the number of students is practically limited to those that can be accommodated in the dormitories, and the very limited rooming facilities available in the nearby towns, emphasizes the need of additional dormitories.

8. The necessity of carefully controlled physical training, and the need of a suitable place for military drill, requires the construction of a gymnasium and armory.

9. The high cost of living has emphasized the importance of a knowledge of foods and cookery, nutrition, home management, clothing, sanitation, and similar subjects, such as is provided in a course in home economics. The new charter opens the State College to women. Every homemaker in the State needs as much training as possible along these lines. The State needs teachers trained in these subjects. Provision must be made to organize this work for women. The U. S. Government will co-operate through the State Board for industrial educators.

10. The dining hall of the College is inadequate. A building to serve this purpose, and as a home economics laboratory, is urgently needed. A separate wing should be provided as a dormitory for the women.

11. The College is now using unfiltered water pumped from Paint Creek and treated with hypochlorite of soda to reduce its bacterial content. It is neither satisfactory nor safe. A proper water supply should be immediately provided for.

12. Most of the buildings used by the institution are brick and wood construction, and are greatly in need of repairs, including plumbing, lighting, and fire protection.

13. A central heating plant would reduce the fire risk, decrease the labor in heating the buildings, and in the delivery and handling of coal.

In accordance with these general considerations, the Board offers the following estimates for the biennium, 1919-20:

STATE BOARD OF AGRICULTURE—ESTIMATES FOR
NEXT BIENNium.

	Present Year, 1917-18.	Proposed.		Total Biennium.	Increase, Biennium.
		1918-19.	1919-20.		
College.	\$40,000.00	\$142,000.00	\$142,000.00	.....	.....
A—Deficiency. . . . .	.....	30,000.00	.....	.....	.....
R—Emergency. . . . .	.....	20,000.00	.....	\$334,000.00	\$254,000.00
Experiment Station.	25,000.00	35,000.00	35,000.00	70,000.00	20,000.00
Ridgely Farm.	5,000.00	5,000.00	5,000.00	10,000.00	.....
Seed Inspection.	5,000.00	7,000.00	7,000.00	14,000.00	4,000.00
Biological Laboratory.	5,000.00	6,000.00	6,000.00	12,000.00	2,000.00
Extension (General).	5,000.00	10,000.00	10,000.00	20,000.00	10,000.00
County Demonstration.	23,000.00	73,600.00	73,600.00	147,200.00	101,200.00
State Smith-Lever.	20,658.00	27,113.56	33,569.17	60,682.73	19,366.73
Farmers' Institutes.	6,000.00	6,000.00	6,000.00	12,000.00	.....
State Horticulture.	8,000.00	8,000.00	8,000.00	16,000.00	.....
Live Stock Sanitary	25,000.00	50,000.00	50,000.00	100,000.00	50,000.00
Executive Expenses.	5,000.00	5,000.00	5,000.00	10,000.00	.....
Land for Laboratory. . . . .	.....	7,500.00	.....	7,500.00	7,500.00

Eastern Branch.	5,000.00	10,000.00	10,000.00	20,000.00	10,000.00
Eastern Branch (Land). . . . .	.....	10,000.00	.....	10,000.00	10,000.00
Deficiency in Interest.	2,047.44	2,047.44	2,047.44	4,094.88	.....
C—Emergency Repairs. . . . .	.....	20,000.00	.....	20,000.00	20,000.00
D—Equipment for New Agricult. Bldg. . . . .	.....	15,000.00	.....	15,000.00	15,000.00
Total.	\$179,705.44	\$489,261.00	\$393,216.61	\$882,477.61	\$523,066.73

A—Adjusting accounts to fiscal year basis and deficiency.

B—Additional staff needed and increases in salaries and wages.

C—Urgent repairs to dining hall and other buildings.

D—Equipment for Agricultural Building just completed.

STATE BOARD OF AGRICULTURE—ESTIMATES FOR NEXT
BIENNIUM—NEW CONSTRUCTION.

	<i>Cost.</i>	<i>Equipment.</i>	<i>Total.</i>
Dining Hall and Home Economics Laboratory.	\$100,000.00	\$20,000.00	\$120,000.00
Girls' Dormitory Wing and Boys' Dormitory.	115,000.00	5,000.00	120,000.00
Gymnasium and Armory.	100,000.00	5,000.00	105,000.00
Central Heating Plant, spur track, conduits, etc.	80,000.00	75,000.00	155,000.00
Filtration Plant.	25,000.00	.....	25,000.00
Agricultural Building for Eastern Branch.	15,000.00	.....	15,000.00
Total.	\$435,000.00	\$105,000.00	\$540,000.00

These buildings are essential to the proper development of the Institution and they should be provided for at the earliest possible date. The Gymnasium is particularly necessary now, but it is recognized that under the present conditions it will probably be impossible to secure the necessary building material and the labor to construct, and that it may be necessary, therefore, to postpone construction. Authority, however, to issue bonds might be provided, to be sold when conditions for building are favorable.

COLLEGE.

The total requested for the College for 1918-19 includes \$30,000, to cover deficiency caused by the unusual conditions of the past two years. To meet the running expenses of the College departments, money had to be borrowed from special funds from year to year. This could be done because the State and Government fiscal years overlap by three months. This condition should be corrected.

It includes also \$20,000 for the purpose of making such increases in salaries and wages as may be absolutely necessary to meet the increased wage scales now nearly everywhere in force and to make such additions to the staff as may be necessary to properly develop the work in the various courses, assist the Extension workers and give help in the Government program of increased production and conservation.

The additional help already greatly needed is in Dairy Stock and Production, Agricultural Organization and Markets, Home Economics and Farm Management.

The balance of the increase requested, viz, \$102,000 per annum, is to continue and enlarge the new lines of work already mentioned. Increases in salaries and wages for two administrative officers, six deans, thirty-eight teaching staff and seven clerks and skilled and miscellaneous labor on the basis of present wage scales amount to \$14,500 per annum.

The additions to force include two deans—Farm Management and Home Economics; teaching staff, including Dairy Stock and Production Specialist, Agricultural Organization and Market Specialist, Horticulturist Farm Management Specialist, and four instructors and assistants, six clerks and miscellaneous labor, in all amounting to \$35,000 per annum.

Additional and increased cost of supplies and equipment for all College divisions and departments, amounts to \$52,500. The cost of nearly everything used by the Institution has greatly increased.

EXPERIMENT STATION.

An increase of \$10,000 per year, including some increases in salary and wages and the increased cost of laboratory materials and general supplies needed in the investigations.

RIDGELY FARM.

No increase requested.

SEED INSPECTION.

An increase of two thousand dollars each year needed to handle increased volume of work.

BIOLOGICAL LABORATORY.

An increase of \$1,000 a year requested for increased cost of equipment for laboratory.

EXTENSION SERVICE.

Five thousand dollars a year increase for work that cannot be carried on the Government Co-operative projects.

COUNTY DEMONSTRATION.

An increase of \$101,200 for the biennium for a County Woman Agent in each county and traveling and office expenses for both Men and Women Agents. This amount will be offset

in part by Government allotments. The additional work was started this year by aid from the State Emergency Fund, Council of Defense, and the Emergency Funds of the National Department of Agriculture. The greatly increased demands on the County Agents make the additional funds necessary.

STATE SMITH-LEVER.

An increase of \$19,366.73 for the biennium is needed to offset the Government Smith-Lever, which is used for General Extension Work in co-operation with the General Government.

FARMERS' INSTITUTES.

No increase requested.

STATE HORTICULTURE.

No increase requested.

LIVE STOCK SANITARY.

Increase of \$25,000 each year requested. This covers some necessary increases in salaries of present staff, including any additional time for eight Deputy Veterinarians, four additional Deputy Veterinarians, five Dairy Inspectors, to carry out the law requiring the inspection work; increases in supplies, traveling and field expenses for the old and new work, and \$1,500 to pay appraisement for diseased animals during 1917.

EXECUTIVE EXPENSES.

No increase requested.

LAND FOR LABORATORY.

The tract now occupied by the Extension Service, consisting of two good buildings and 11 acres of ground on the B. & O. R. R., College Park. We have option to purchase for \$7,500. It was recently assessed at \$10,000. We need this for our Biological Products Laboratory and Hog Cholera Plant, to which it is in every way well adapted.

EASTERN BRANCH.

An increase of \$5,000 a year needed for general enlargement of the work. This Institution is doing fine work for the colored people and there is a great need of enlargement.

EASTERN BRANCH LAND.

Additional land is greatly needed. An adjoining farm can be purchased for \$10,000. The Board of Agriculture recommended this, if money should be available.

DEFICIENCY IN INTEREST.

This item is included on same basis as present year. The State Treasurer should determine whether the deficiency is more or less than the amount last appropriated. The Government grants, known as the Land Script Fund, requires that the fund be invested at five per cent. If the amount received is less than this, the State is obliged to make up the deficiency.

EMERGENCY REPAIRS.

Several of the old buildings are in need of immediate repair. Some alterations in the President's House and Science Hall and other buildings are badly needed to handle the Home Economics Work while new buildings are being constructed. The new building will probably be greatly delayed on account of war conditions.

EQUIPMENT FOR NEW AGRICULTURAL BUILDING.

It was planned to equip the new Agricultural Building from the balance of the Building Fund. The disturbance caused by the war, however, forced us to use all of the money for construction. The building will be ready January 1st, but we can make only partial use of it until it is equipped. Fifteen thousand dollars is requested for this purpose.

DINING HALL AND HOME ECONOMICS LABORATORY.

The buildings now used for the dining hall are of temporary construction, and were put up to meet the emergency following the destruction of the main buildings by fire some years ago. The dining hall is urgently necessary. This should include, in addition to the dining hall facilities, the necessary laboratories and equipment for Home Economics training. The new charter of the College opens it to women, and the demand for women trained in Home Economics, both in the homes of the State and in its schools, requires that we should furnish facilities for obtaining this education to the young women of the State. The high cost of living has emphasized the importance of a knowledge of foods and cookery, nutrition, home management, clothing, sanitation and similar subjects, such as is provided in a course in Home Economics.

GYMNASIUM.

The need for a Gymnaeisum and drill hall has been acute for several years. The Institution is now in the Reserve Officers' Training Corps class, and it is all the more important that the physical training of the men, as well as their military training, should be conducted properly. This cannot be done without a place suitable for the purpose. It is believed that the two lines could be economically combined in one building.

CENTRAL HEATING PLANT.

The inclusion of an item for a central heating plant is believed desirable to avoid the cost of constructing individual heating plants with each new building. If this is done, the heating of the individual places will be very difficult, from the standpoint of expert management of the handling of the coal and increased fire risk.

WATER SUPPLY.

After a careful study of the situation at the College in regard to the water supply and a conference with the State Board of Health officers, it is evident that immediate steps must be taken to improve the water supply. The water is now pumped from Paint Branch. The amount of sediment in the water is so great that its bacterial content is not sufficiently lowered by the hypochlorite treatment, even when used in very large doses. The large doses are not only objectionable to the taste, but the hypochlorite is injurious to the plumbing, eating out the pipes rapidly. Furthermore, the treatment does not make the water safe, owing to the large amount of sediment, as stated above. This source, however, is the only available one until plans can be made to bring the water from the Washington system, which will be quite a number of years, owing to the cost. The State Board of Health has suggested the advisability of constructing at once a sand filtering plant and settling basin. The estimated cost of this is \$25,000.

AGRICULTURAL BUILDING FOR THE EASTERN BRANCH.

This item was submitted by President Spencer after the meeting of the Board of Agriculture, and was not passed upon by the Board. There is no doubt that the building is needed, and would doubtless be approved by the Board on condition that it should not displace other requests of the Board considered more urgent.

BIENNIAL REPORT
OF
The Maryland State College of Agriculture
— AND —
The Maryland State Board of Agriculture

*From September 30, 1917, to October 1, 1919, and
Estimates for the Years 1921 and 1922*

Including a Summary of the Work and Needs
of the
State College of Agriculture
The Experiment Station
The Extension Service
The Live Stock Sanitary Section
The Tobacco Warehouses
and
Other Branches of the Work



Official Publication of the Maryland State College
Vol. 16 October, 1919 No. 5

Table of Contents

Letter of Transmittal	Page 5
Organization of the Board	6

THE STATE COLLEGE

Organization of the College	7
Cooperation with the War Department	7
The Students' Army Training Corps	8
Water Supply	9
Cooperation with the State Board of Education	9
Aid to Rural Teachers	10
The Normal and Industrial School at Bowie	10
Eastern Branch of the Maryland State College at Princess Anne, Maryland	11
Cooperation with the Maryland Conservation Commission	11
Cooperation with the State Board of Forestry	11
Cooperation with the State Geological Survey	12
School of Agriculture	13
Division of Animal Industry	25
School of Engineering	42
School of Chemistry	49
School of Education	53
Summer School	57
School of Home Economics	59
School of Liberal Arts	61
Library	65
Graduate School	67
Extension Service	81
Report on the Agricultural Work Conducted Under the Auspices of the Maryland Council of Defense in Cooperation with the Extension Service	97

TABLE OF CONTENTS—Continued

	Page
State Horticultural Department	110
Experiment Station	116
Eastern Branch of the Maryland State College	120
Accountant	122
Recorder	68
Service Section	74
Changes in Personnel	75
The Agricultural Building at the State College	80

THE STATE BOARD OF AGRICULTURE

Organization	137
General Powers	137
Live Stock and Live Stock Products	138
Hog Cholera	138
Tuberculosis Eradication	139
Dairy Inspection	139
Traveling Dairy Inspection Laboratory	139
Cooperation with the Maryland Council of Defense	140
Encouragement of Immigration	140
Marketing Investigations	140
Cooperation with the State Dairymen's Association	142
Cost of Producing Tomatoes	142
Report of the Live Stock Sanitary Section.....	142
Report of the State Tobacco Warehouses	150
Needs for the Biennium, 1921-1922	152
Appropriations Requested	157

LETTER OF TRANSMITTAL

Hon. Samuel M. Shoemaker,

*Chairman, Board of Trustees of the Maryland State College
and the Maryland State Board of Agriculture:*

Sir—I have the honor to submit herewith a brief report of the work accomplished by the Maryland State College of Agriculture, the Experiment Station, the Extension Service, the Live Stock Sanitary Section, the Tobacco Warehouses, and other branches of work under the Boards.

A brief statement is also included presenting the needs of the various branches of the work for the next biennium.

Respectfully,

ALBERT F. WOODS,

President and Executive Officer.

January 1st, 1920.

THE BOARD OF TRUSTEES

OF THE

MARYLAND STATE COLLEGE OF AGRICULTURE

AND THE

MARYLAND STATE BOARD OF AGRICULTURE

SAMUEL M. SHOEMAKER, ESQ., Chairman.....Term expires 1925
 ROBERT CRAIN, ESQ.....Term expires 1924
 JOHN M. DENNIS, ESQ., Treasurer.....Term expires 1923
 DR. FRANK J. GOODNOW.....Term expires 1922
 CARL R. GRAY, ESQ.....Term expires 1921
 A. W. SISK, ESQ.....Term expires 1920
 DR. W. W. SKINNER, Secretary.....Term expires 1919
 B. JOHN BLACK, ESQ.....Term expires 1926
 HENRY HOLZAPFEL, JR., ESQ.....Term expires 1927

ALBERT F. WOODS, *President of the College and Executive Officer*

EXECUTIVE COMMITTEE

S. M. Shoemaker, Chairman

Dr. Frank J. Goodnow

Robert Crain

A. W. Sisk

John M. Dennis

COLLEGE AND EDUCATIONAL WORK

Dr. Frank J. Goodnow, Chairman

Carl R. Gray

Dr. W. W. Skinner

EXPERIMENT STATION AND INVESTIGATIONAL WORK

A. W. Sisk, Chairman

Robert Crain

Dr. W. W. Skinner

EXTENSION AND DEMONSTRATION WORK

Robert Crain, Chairman

Carl R. Gray

B. John Black

INSPECTION AND CONTROL WORK

John M. Dennis, Chairman

A. W. Sisk

Henry Holzapfel, Jr.

REPORT

OF THE

Maryland State College of Agriculture

Organization of the College

The general plan of organization of the College under the provisions of the new Charter, Chapter 372, Laws of 1916, was presented in the last Biennial Report. A further development of the plan there presented was approved by the Board in 1919. According to this plan, the subject matter groups formerly known as Divisions are designated as Schools, as follows:

School of Agriculture, including Horticulture

School of Chemistry

School of Education

School of Engineering and Mechanic Arts

The Graduate School

The School of Liberal Arts

School of Home Economics

Department of Military Science and Tactics

Department of Physical Education and Recreation

A School of Veterinary Science and Medicine is in the process of organization. Some time in the future there will be needed a School of Commerce and a School of Journalism. Other schools may be organized as the needs of the State require.

Cooperation with the War Department

Maryland State being one of the Land Grant Colleges has, in accordance with the requirements of the Morrill Act, always maintained a military department under the supervision of the Secretary of War. When the Act authorizing the establishing of Reserve Officers' Training Corps was passed, a unit of that Corps was established here. When the United States entered the war against the Central Powers, Maryland State College, in common with the other State colleges, was able at once to furnish a body of trained men for officers and special technical work in engineering, chemistry, etc. Our facilities in Radio Engineering were especially good. Upon request of the Signal Service, we established a Radio School here, beginning with three hundred (300) men and later enlarged to six hundred (600), as the new Agricultural Building became available. The School was opened December 30, 1917, and closed September 30, 1918, to enable us to take a larger unit of the

Students' Army Training Corps. All of the facilities possessed by the College were made available for the work and the War Department furnished the additional equipment and personnel needed. The School was a marked success, receiving very high commendation from the War Department. More than twelve hundred (1,200) officers and experts were prepared for active service.

The Students' Army Training Corps

The success of the Land Grant institutions in training men for military service led to the enlargement of the plan to use the colleges of the country for the quick training of part of the necessary officers required for the enlarging military needs. The changes in such institutions as ours were not great. Modification of the courses to meet the military requirements was easily made. Everything was run on a strict military basis, the discipline being, therefore, looked after by the military authorities in cooperation with the President of the College. The educational work was under the supervision of the President, with the cooperation of the Commandant. The utmost harmony prevailed. The epidemic of influenza interfered with the program and the work was closed after three months by the termination of the war. Had the work continued, we feel that the final outcome would have been satisfactory. As it was, the time was by no means lost educationally. Excellent progress was made in military and in educational subjects. Many men were able to continue their educational programs and many others were given an introduction to higher education who otherwise probably never would have undertaken it. Many of these men are now entering colleges. As most college men were of draft age, they were, of course, quickly drawn or voluntarily entered the army or navy. Had it not been for the Students' Army Training Corps, therefore, many institutions would have been obliged to close for lack of students. Besides being able to render valuable assistance, the institution was itself helped by the cooperative relation. The arrangement with the War Department provided that each college should use all of its available faculty, personnel and equipment and operating funds. The War Department was, under certain conditions, to provide the additional needs. The War Department paid the subsistence expenses ordinarily met by the students, amounting to one dollar (\$1.00) a day per man. It constructed a temporary addition to the mess hall and provided some additional toilet facilities and other equipment, amounting in all to approximately \$24,980.00 (twenty-four thousand nine hundred and eighty dollars). On final settlement, the College paid salvage for such of the building and equipment as had a future use, amounting in all to five thousand five hundred and twenty-seven dollars (\$5,527.00). Additional instruction was provided, amounting to six thousand four hundred and seventy-three dollars and seventy-two cents (\$6,473.72). The cost, therefore, to the Government for the service rendered was extremely low.

Student Activities

Inasmuch as well-planned recreation is now a part of the educational policy of every standard institution, this work has been developed along broad lines. Despite the lack of facilities, a system has been worked out which takes care of the leisure hours of the students in ways beneficial to students and College.

This has involved the organization of a comprehensive plan of inter-collegiate and intra-mural sports, literary societies, dramatic club, county clubs, fraternities, student self-government, interclass athletic contests, chess and checker club, Y. M. C. A., lyceum course, production of a newspaper by students, a series of instructive and entertaining lectures, and other activities. Students are allowed to participate in only as much of such recreational work as should not interfere with their regular scholastic programs. All student activities, dormitories, dining hall, etc., are managed by a joint committee of Faculty and students, which committee is directly responsible to the President of the College. This system has developed a splendid spirit of cooperation between Faculty and students, and produced an earnest desire on the part of both to aid the administration of the College in the building of an educational edifice of real consequence.

Water Supply

The water supply of the institution being drawn directly from Paint Branch and being a source of danger, immediate steps had to be taken to make it safe. This being in the nature of a permanent improvement, the Maryland Council of Defense provided for the construction of a filter plant at a cost of approximately \$23,000. This provided one of the most urgent needs of the institution.

Altogether, the institution came through the war period in good shape and was able to render valuable service directly to the war program, as well as indirectly in food production and conservation.

Cooperation with the State Board of Education

The Maryland State College is a part of the State educational system, as distinguished from privately endowed or supported schools. As such, it must articulate its work closely with that of the other schools and provide an opportunity for any who desire to fit themselves by advanced training in any field for larger and more efficient service.

Maryland is one of those fortunate States in which the State-controlled work in higher education is centered in one institution. The State College must, therefore, do for Maryland what the State universities, which include the State colleges, do in many of the Western States, as Ohio, Illinois, Wisconsin, Minnesota, Nebraska, Missouri, and others. It must accept, without examination, graduates of the standard four-year accredited high school courses in the branches of the College for which the student is prepared.

The College must cooperate with the educational agencies of the State in bringing and holding the high schools to the most approved standards. To aid in this, the College courses must be open to teachers and special provision must be made to train high school teachers. This is the function of the School of Education, with a special summer session for teachers, supervisors, superintendents, and other advanced workers.

The State Board of Education has been designated as the State agency controlling national aid to vocational education under the Smith-Hughes or Vocational Education Act. Under this Act, the State Board of Education has designated the State College as the agency to train teachers of Agriculture, Home Economics, and Trades and Industry. A full report of this work will be found under the School of Education. While the College already had this duty under the Morrill Act and its own charter from the State, this additional authority and the close articulation provided with the State Board of Education will make the work more efficient than it otherwise might have been.

Aid to Rural Teachers

The State College being the only college in the State dealing with agriculture and rural life, it is its special duty to cooperate with the State Board and other agencies to promote rural education. This is accomplished through maintaining a Summer School for rural teachers and in cooperating with them in Boys' and Girls' Club Work through the Extension Service. Thus practical Agricultural and Home Economics Education is provided through the rural schools under the supervision of the County Superintendent and the Boys' and Girls' Club specialists of the Extension Service of the College. For a full account of the work see the Extension Service Report.

The Normal and Industrial School at Bowie, Maryland

This is the State Normal School for the training of colored teachers. The State Board of Education has requested the cooperation of the State College in developing this School, with special reference to vocational education. The School has a good farm which can easily be developed for agricultural education purposes, and plans for this have already been formulated in cooperation with the officers of the School and the State Board of Education. It is planned also to develop the work in Home Economics, and later in Trades and Industry. Teachers trained in these subjects will be able to do much better work, no matter where they teach. The State College desires to render every possible assistance in making this one of the best teacher-training schools for colored people in the country. The School is sadly in need of buildings and equipment for its farm, additional dormitory facilities, and increased maintenance funds for teachers and general equipment.

The Eastern Branch of the Maryland State College at Princess Anne, Md.

When the State of Maryland accepted the funds from the United States Government under the Morrill Act, it was necessary to provide also educational facilities under the Act for colored people. This was accomplished through an agreement with the Trustees of Morgan College that the State College take over control of their branch at Princess Anne. The proportion of Morrill funds allotted to colored college work has gone to this institution from the time the State accepted the grant. It is contended by some that this money should be transferred to the State Normal School at Bowie. I do not think that this would be wise or fair. Every effort has been made by the Trustees of Morgan College and the Board of Trustees of the State College to develop the school at Princess Anne in strict conformity to the requirements of the Morrill Act, and commendable progress has been made. The State has purchased eighty acres of additional land for enlarging the work in agriculture, and plans for the further development of the institution to meet the needs of the colored citizens of the State in higher education in the arts and industries and in Home Economics are being worked out. For further information see the Report of the Eastern Branch of the Maryland State College.

Cooperation With the Maryland Conservation Commission

The conservation and development of the beneficial "wild life" of the State is important, not only in its indirect value to agriculture, as in the case of insect-destroying birds, but also on its own account in the production of food, skins and furs. The formation of game preserves and the protection of game and fish are highly important, but probably of greater importance are the possibilities of game farming. This has proved highly profitable if properly handled. The utilization of low spots on which water levels could be maintained for fish culture would bring thousands of acres of land into profitable use. Representatives of the Maryland Conservation Commission, the United States Bureau of Fisheries, and of the Maryland State College have made a preliminary survey of parts of the State College property at College Park with a view to utilizing from ten to twenty acres of low land for fish-culture ponds. The water for these could be partly provided by a series of springs and partly from Paint Branch. It is believed that an excellent demonstration could be made of how to make profitable use of such land and at the same time furnish fish-culture facilities to the Conservation Commission and educational facilities to students of these subjects at the State College.

Cooperation With the State Board of Forestry

The Act providing for the State Board of Forestry provides that the President of the Maryland State College shall be a member of the

Forestry Board and that the State Forester shall give lectures on Forestry at the State College. Maryland's forest resources are highly important and are becoming more valuable every year. There are many thousands of acres of land in the State that can be more profitably devoted to forestry than to any other use. The returns from such lands in forest products are supplemented by the protection tree-growth affords to birds and game, to the protection of water sheds, regulation of stream flow, and park spaces for recreation.

A forest nursery is maintained at the College in cooperation with the Forestry Board. This could well be enlarged. The College has offered to provide the necessary land adjoining the present nursery.

Cooperation With the State Geological Survey

The Act authorizing the Maryland Geological Survey provides that the President of the State College shall be a member of that Board. The Geological Survey is the basis of the Soil Survey work as conducted by the State College. The information secured in these surveys is necessary for the formulation of plans for the most economical use of various soil types in permanent agriculture. We hope that the closest cooperation may be maintained between these two important branches of State work. A full account of the Geological Survey work will be found in the reports of that Board. For further reference to soil survey work see report of the Director of the Experiment Station of the Maryland State College.

The School of Agriculture

P. W. ZIMMERMAN, *Dean*

Function

The teaching of a rational practical system of farming is the primary aim of the School of Agriculture. The permanent prosperity of rural citizens is in direct proportion to the producing capacity of the land. The most successful farmer is the one who can produce a maximum quantity per acre of the best quality of agricultural products at a minimum cost and dispose of them in the markets to the best advantage.

The curricula are planned to give the student a general knowledge of all phases of agriculture and related sciences, but at the same time afford an opportunity to specialize along the lines in which he is particularly interested. The plan provides for those who wish to take up professions such as teaching, research, county agent work, as well as farming.

Organization

In the spring of 1919 the College was reorganized with the discontinuance of Divisions and the initiation of Schools. Two whole divisions and several departments were organized into the School of Agriculture. As now organized it includes the following:

A. Division of Plant Industry

1. Horticulture
 - Floriculture
 - Pomology
 - Landscape Gardening
 - Vegetable Gardening
2. Agronomy
 - Forage Crops
 - Grain Crops
3. Plant Morphology and Mycology
4. Plant Physiology
5. Plant Pathology
6. Forestry

B. Division of Animal Industry

1. Dairy Husbandry, comprising Dairy Stock Production, Dairy Manufacturing and Marketing

2. Animal Husbandry, comprising Cattle, Horses, Swine, Sheep, Goats
3. Poultry Husbandry
4. Animal Pathology and Veterinary Medicine
5. Bacteriology and Sanitation
6. Laboratory of Geology and Soils
- C. Geology and Soils Department
- D. Department of Farm Management, including also Agricultural Economics, Markets, and Rural Organization
- E. Department of Zoology, including General Zoology, Entomology, Bee Culture, and Fish Culture
- F. Department of Farm Equipment
- G. Department of Short Courses in Agriculture

It should be noted that such an organization gives the School a hold on every phase of agriculture, and after a student takes this work he should be equipped to attack and solve any farm problem that might be presented. It also links the pure sciences with agricultural subjects and brings out their best practical phases.

Curriculum Changes

When the College was reorganized into schools, the course in farm machinery was transferred from the Division of Engineering to the School of Agriculture. We have organized a new department called Farm Equipment, with farm machinery as the nucleus. The demand for this kind of teaching is considerable and is increasing every day. As soon as the department can be supplied with the necessary teaching force and equipment it will offer several courses in farm equipment.

The courses in farm management formerly in the Division of Economics have been organized, with agricultural economics as a department of farm management in the School of Agriculture.

The Department of Economic Zoology has put in a new course for the study of Maryland Water Resources. It will deal with the immense possibilities of the fish, oyster, and crab industries. This study will open up a field which is new and of much importance.

For the past two years it has been necessary to omit the short winter courses for farmers because of the lack of accommodations for housing and boarding students. The short courses offered in the past have done much good for the State, and it is with regret that they had to be discontinued.

The three months' course was to have been offered last year for the first time, but was withdrawn for the same reasons that the short courses were discontinued. This year there are many applicants for the work, and some take a trip to the College to make arrangements, only to be disappointed when they are unable to find a place to live.

The two-year agricultural course of a sub-collegiate nature which has been offered in the past may be discontinued after this year. The

reason for this change is that the State agricultural high schools, which are now being organized, can do much the same work and we are anxious to cooperate with them to get their home students to attend.

Teaching Activities

The Faculty members of the different departments of the School meet with the Dean once a month to discuss problems in general and to formulate the working plans and policies for the School. This practice brings about greater cooperation than when departments work entirely separately.

There is a growing tendency for departmental conferences. This custom develops a professional spirit, and no doubt the teaching will be greatly improved. The School of Agriculture gets much of its teaching material from the results of investigations carried on at the Experiment Station. The workers there formulate the agricultural practices and policies for Maryland, and the College proper teaches these gleanings, together with those worked out elsewhere.

Registration of Students

The registration in the School of Agriculture decreased when the S. A. T. C. was established. This year, with the return of normal conditions, the School has more students than the number of professors we now have can handle properly. The registration is as follows:

Seniors	21
Juniors	13
Sophomores	29
Freshmen	47
Two-Year Agriculture—	
Second Year.....	15
First	22
Unclassified	8
Total.....	155

Besides these students the School is instructing a large number of students taking their major work in chemistry, liberal arts, education, and home economics.

Farm Experience

A committee has been appointed to see that students who are working for degrees in Agriculture have a fair knowledge of actual farm practices before graduation. Students are often required to spend from three to nine months on an approved farm before degrees are granted.

Investigational Work

The Faculty members of the School of Agriculture are being encouraged to spend some time at research or investigational work under the direction of the Experiment Station. Some men are employed to divide their time between teaching, investigation, and extension work. The investigational work keeps the men alert to their subject, and extension work puts them in touch with actual farm practices, both of which are helpful in teaching.

Extension

The School of Agriculture is glad to lend its specialists for agricultural extension work. Hardly a day passes but that some are found judging exhibits, answering inquiries from farmers, advising with visitors, or visiting at the homes of students as guests and advisers.

New Buildings

It was thought that when the new building was completed it would supply the much-needed room for agricultural work. While it did relieve the situation to a large extent, it has not satisfied the need. We should have additional classrooms, offices, and laboratories equal to those furnished by the new building. There should be a new building costing approximately two hundred thousand dollars (\$200,000) to house the horticultural, zoological, botanical, and farm crops work.

The laboratory work in farm machinery is now being done in the Stock Judging Pavilion. The machinery occupies most of the space and renders the pavilion useless for other purposes. In fact, it is too small for the work with machinery. It has been estimated that a building to meet the needs for the next few years could be built for twenty-five thousand dollars (\$25,000). This building could be planned in such a way that when the department grows large enough to need more room a new portion could be added.

The botanical work, plant pathology, plant physiology, and farm crops have always been hampered through lack of greenhouses. It is estimated that it would cost five thousand dollars (\$5,000) to erect greenhouses to supply the needed space. It would be desirable to have twenty-five thousand dollars (\$25,000) spent for greenhouses.

At the present time there is no shed for the farm implements and vehicles used at the College. A plain structure that would satisfy the present need would cost one thousand dollars (\$1,000).

A Model Farm and Farm Cottage

We have always felt that the agricultural students are not getting enough actual farm practice while they are in College. There is land near the College that could be purchased for this purpose. While the initial cost would be fairly large, its up-keep could be taken care of by receipts from sales of the products. The College could use the farm

to demonstrate to students the most ideal and profitable way to manage a farm. It could keep a system of records that would show farmers and students how much it costs to produce a ton of hay, a hundred bushels of corn, a gallon of milk, or any other farm product.

The farm should have on it a model farm cottage, planned and built by the Home Economics and Farm Equipment Departments.

In a similar manner it should have the barn, poultry house, and other buildings which an ideal farm would maintain.

If the College were furnished with such a farm, it could demonstrate in a more effective way to students and the public what it is teaching. There are numerous inquiries concerning model farm cottages, barns, silos, poultry houses, dairy herds, etc., that could be answered by a visit to the College.

The land purchase could be made, the buildings erected, and the farm equipped for fifty thousand dollars (\$50,000).

The Department of Forestry is in urgent need of practice land. Problems can well be talked over in class, but a greater amount of practical work can be given if there is a place to demonstrate the teachings. It is urged that a cut-over tract within walking distance of the College be purchased.

DEPARTMENT OF HORTICULTURE

E. C. AUCHTER, *In Charge*

At the beginning of the present biennium the horticultural work—pomology, vegetable gardening, floriculture, and landscape gardening—was organized into one Department of Horticulture. We now have one or more specialists in each sub-department, and we find much better cooperation than could exist under the old system.

The Department has done much in the way of reorganizing the work, building up old equipment and adding new. The floricultural greenhouses have been so completely overhauled that the whole horticultural building is given a better appearance. The five unheated greenhouses have recently been piped and connected with the heating plant, so that they can be profitably used. A root and fruit storage room has been built in the basement. Heretofore fruit and vegetables used in laboratory work for judging teams had to be purchased from high-priced stock on the market. Now material can be saved from our own stock and stored until the class is ready to use it.

The Department has started a small nursery for student use. The United States Department donated to the College several dozen specimens. These, together with our present stock, will give a good beginning. In four or five years we hope to have the nucleus of a nursery that will bear inspection.

There has been a desire in the past to cooperate with the other public schools of Maryland. To this end, the professor in landscape gardening has made several trips to schools at the suggestion of the Boards of Education or teachers, for the purpose of laying out grounds and advising on plantings. In time, the College may be in position to furnish some of the shrubbery to ornament the grounds.

Aside from the teaching, all members of the Department are giving some time to experimental and extension work.

The Department as a whole lacks room and equipment. Some of the urgent needs are: root-storage cellars, cold-storage fruit rooms at different temperatures, office and classroom space, and additional teaching force, if we are to care properly for the increased number of students now enrolled and which in all probability will double next year.

DEPARTMENT OF AGRONOMY

J. E. METZGER, *In Charge*

Since the last biennial report was made the Department of Agronomy for the institution as a whole was organized under one head, with the separation of the soils work, which now constitutes another department. The agronomy work includes forage crops, grain crops, tobacco, etc.

Concerning quarters and equipment the head of the Department makes the following statement: "The quarters for the instructional work in agronomy have been removed from the greenhouse buildings to the third floor of the new agricultural building. There are available there a laboratory, a classroom, and an office. These facilities, although inadequate for the present needs of the work, are far superior to any ever enjoyed by members of the staff. The equipment is limited in quantity, but every item has been carefully selected and represents in scope facilities equal to those of the best found in any agronomy laboratory."

The Department has made unusual progress, and has possibly the leading laboratory in the United States on grain grading, which has so recently come into vogue.

During the present term one hundred and eleven (111) students are registered for work in agronomy. Between two hundred and fifty (250) and three hundred (300) class registrations will occur within the year.

Numerous conferences have been held by members of the staff during the past year, and every assistance possible has been given not only for the development of agronomy work, but for the advancement of the affairs of the institution in general.

Under the subject of Extension Work the head gives the following summary for the Department as a whole for one year:

"Number of addresses at farmers' clubs, etc.....	258
Approximate attendance at meetings	17,808
Number of circulars prepared	10
Number of letters written	3,150
Number of exhibits judged	35
Number of demonstrators visited	174
Number of army camps visited	14
Number of addresses at army camps.....	18
Approximate number of soldiers in attendance.....	11,000

"Considerable demand was made upon the Department by the near army camps for plans for cropping systems and for permanent grass area on drill fields and in the vicinity of camp barracks. This work involved plans for a total of 11,200 acres."

The question of needs for future development can best be taken up by quoting from the report of the head:

"In addition to one thousand one hundred and seventy-two dollars (\$1,172.00) needed for supplies and equipment, there should be available for student labor, traveling expenses, and incidental expenses three hundred dollars (\$300.00), making a total budget of one thousand four hundred and seventy-two dollars (\$1,472.00).

"For the proper development of the Department, it is imperative that the offices, laboratories, equipment, and libraries be brought together into one building. This will not only facilitate the work of the Department, but will make available for all phases of the work much equipment that is now in use only part of the time. For example, the inventory of the Experiment Station shows a total value of slightly over two thousand dollars (\$2,000). While some of this equipment has been used in extension and instruction work, a much larger and better use of it could be made if it were concentrated in adjacent laboratories and offices.

"It would seem that the interest of the institution as well as the agriculture of the State would warrant the development of the agronomy work commensurate with its importance. The direct money value in Maryland of the crops with which this Department is concerned is double that of all the other crops combined and twenty-five per cent (25%) greater than the total livestock value reported for the State. The need for additional help in the instructional work is especially urgent. At least two additional assistants are required to properly handle the teaching work, and to do the necessary extension and investigational work that is essential in the development of good teachers."

DEPARTMENT OF PLANT MORPHOLOGY AND MYCOLOGY

J. B. S. NORTON, *In Charge*

As this Department is new, it has hardly had the chance to orient itself. It will have charge of the plant anatomy, taxonomy, mycology, and cytology. The plant anatomy and taxonomy are especially important for students in horticulture and agronomy. Mycology and cytology are closely related to plant pathology.

There will be about sixty (60) registrations in the different subjects in the Department during the present year.

The most urgent needs of the Department are microscopes, herbarium cases, and available space in a greenhouse.

DEPARTMENT OF PLANT PHYSIOLOGY

C. O. APPLEMAN, *In Charge*

All work of the institution which has to do with the physiology of plants has been assembled into one department. It deals in particular with physical and chemical phenomena and the direct effect of elements on plants. Many of the research problems along horticultural, agronomic, and soils lines are closely linked with the physiology of plants. The majority of students doing graduate work in the School of Agriculture take plant physiology as their major or minor work.

The Department is especially well fitted to give graduate work, since the equipment at the College and the equipment in part at the Experiment Station are at its disposal for teaching.

Undergraduate work is given primarily to sophomores and juniors.

Practically all students registered in agriculture, chemistry, general science, and liberal arts study plant physiology in the winter and spring terms.

The most urgent needs of the Department at the College proper are more equipment and a greenhouse erected especially for physiological work. The cost of the greenhouse when linked with others planned will be one thousand dollars (\$1,000).

DEPARTMENT OF PLANT PATHOLOGY

When the great demand for increased production came, plant pathologists were looked to for a helping hand. The importance of the studies in plant diseases and control was shown as never before.

The Extension Service and the Experiment Station are both equipped with specialists in the subject. They have been kind enough to lend these men on part time for teaching purposes, but the demand has become sufficiently great to consume time equal to the services of one man.

The Department has three needs: equipment for a laboratory, which would cost about one thousand dollars (\$1,000); a new greenhouse costing one thousand dollars (\$1,000), and services for teaching equal to the full time of one man.

DEPARTMENT OF SOILS

A. G. McCALL, *In Charge*

The work in soils aims to equip the future farmers with information on soil types, the source of fertility, and the management for conservation of fertility. With the large number of run-down farms at hand in Maryland, no other argument is needed to prove the value of the soils work.

All students in agricultural departments take soils work, as do many students in chemistry and liberal arts. The Department handles about one hundred and fifty students a year in the different courses.

The following recommendations are quoted from the Departmental report:

"The transfer of the soils work from Morrill Hall to more commodious quarters in the basement of the new agricultural building has made necessary the purchase of additional apparatus, furniture, and fixtures, but funds have been entirely inadequate to supply the pressing needs of the Department. It is urged, therefore, that a special item providing for the equipment of the Department of Soils be included in the budget for the biennium 1920-1921. In the distribution of space in the new agricultural building, the four rooms occupying the northwest section of the basement were assigned to this Department. These four rooms provide for one office, one large laboratory for the beginning and short course work, one small store room for apparatus and material, and one room for advanced laboratory work. While these rooms are adequate for present requirements, any encroachment on this space will seriously interfere with the development of the instructional work in soils. The room now occupied by the General Service Department is needed not only to afford additional space, but it affords the only means of direct communication with the outside and was intended primarily for the reception and the preparation of soil samples."

DEPARTMENT OF FARM MANAGEMENT

W. T. L. TALIAFERRO, *In Charge*

In this Department are grouped courses in farm management, agricultural economics, together with kindred subjects. The aim of the Department is to take senior students after they have had agri-

cultural training and show them how to organize the farm and farm business to produce the greatest continuous profit.

Aside from the teaching at the College, the opportunity for work in the State is great. The professor of farm management is so well known over the State of Maryland that he is constantly in demand to visit farms and advise with owners on the management of their places.

The Department has developed a splendid scheme for carrying students in the class to all types of farms in the State to study the best, the poorest, and the average farms. In time, the plan is to make detailed studies of cost of farm products to determine whether the farmer is producing them at a gain or a loss.

The greatest needs of the Department are laboratory and classroom space; equipment in the way of files, shelves, maps, etc., and the services of another specialist in the subject.

DEPARTMENT OF ZOOLOGY

E. N. CORY, *In Charge*

The Department of Zoology was one of the first to be thoroughly organized under one head and extending through all divisions of the institution. The professor in charge oversees the work in teaching, investigation, and extension.

The Department has quarters on the first two floors of Science Hall. These quarters are not entirely satisfactory for the type of work that is done, and requests have been made for other quarters.

One of the most important phases of the work is entomology. All students taking agricultural work are required to get a thorough knowledge of insect pests and their control. The Department handles, at some time in their course, all students registered in agriculture, home economics, liberal arts, and chemistry. The increased enrollment this year has nearly doubled the work of the members of the staff, and as yet we have found no way of bringing them relief.

During the war emergency the Department as a whole gave assistance in many ways to increase crop production. The professor in charge spent most of his time in the State inspecting nurseries and demonstrating insect control. Under other headings a detailed report can be found of his investigational and extension activities.

Professor Pierson of the teaching staff spent one summer demonstrating rat control. The following is quoted from the Departmental report:

"In order to obtain data upon which later campaigns may be based. Mr. C. J. Pierson, operating under funds from the Council of Defense and directed by the head of the Department, conducted a campaign of demonstrations in Talbot County in which thirteen (13) demonstrations were made, with the result that four hundred and

twenty-five (425) rats were captured in one month. As high as one hundred and eight (108) rats were captured on a single farm. At the rate of three dollars (\$3.00) per rat, the total amount saved to the farmers of Talbot County was one thousand three hundred and seventy-five dollars (\$1,375). Even should we deduct from this amount Mr. Pierson's salary and expenses, together with the total cost of the rat traps which still are in good shape and available for use, the net profits to the farmers of Talbot County for this work amount to at least one thousand dollars (\$1,000). This work should be continued and amplified another year."

The following relative to the development of the water resources of the State is quoted from the departmental report:

"The Department has been endeavoring to develop a course dealing with the biology, catching, marketing, and conservation of Maryland's wonderful resources in aquatic life. There are approximately six hundred and forty thousand (640,000) acres of tidal bottoms in the State which should be as productive or more productive than an equal area of land, and it is the intention to develop its aquatic resources to the fullest capacity. With this end in view, cordial relations have been established with the Conservation Commission and the United States Bureau of Fisheries. A course of lectures has been outlined for the mid-winter term on Maryland's water resources. It will consist of lectures on the oyster, crab, diamond-back terrapin, fish, and fisheries; conservation and legislation by Doctors Churchill and Coker, Mr. Snyder of the Bureau of Fisheries, Mr. Truitt of this institution, Dr. Nelson of the New Jersey Experiment Station, and Mr. Killian of the Conservation Commission. The prospects for a State hatchery on Paint Branch are very bright, and the movement has been started to secure an appropriation from Congress with which to establish an experimental station in fish culture for the Bureau of Fisheries at this place.

". . . Twenty-five thousand dollars (\$25,000) is requested for the development of the Fish Culture Station, according to the estimate submitted by Mr. Leach, in charge of the Division of Fish Culture—

"Construction of 12 ponds, $\frac{1}{2}$ to $\frac{3}{4}$ acres each.....	\$ 9,500
Water supply, dam, pipe line (laid), right of way for pipe line	7,000
Dwelling for keeper	4,000
Building, fish-cultural and shop purposes	1,500
Equipment, seines, tools, etc.....	1,000
Fence, non-climbable.....	2,000
Total.....	<u>\$25,000"</u>

The work in bee culture has made some progress within the last two years, but with the resignation of Professor Cale has gone more

slowly than it should. The Department should have a professor of bee culture in charge of courses in the College, and if time permits, to carry along investigational work.

The most serious needs of the Department are as follows: double the amount of equipment; one assistant professor of zoology; one assistant professor in entomology; one professor of aquiculture; one professor of apiculture; one assistant on fellowship basis.

DEPARTMENT OF FARM EQUIPMENT

F. A. WIRT, *In Charge*

The work in farm equipment was organized this year into a department. Prior to this time the work in farm machinery, etc., had been offered by the School of Engineering.

Last year no instruction in the subject was offered because the specialist enlisted in the army and another could not be found. This year the Extension farm machinery specialist was made head of the Department and some very important work is being offered.

The importance of the work and the needs of the Department can be seen from the following report:

"The need for farm machinery instruction is acute. Tremendous strides have been made in the past five years in the development and use of farm machinery. Agricultural students need instruction in the latest labor-saving machinery, including horse machinery and power farming machinery; particular emphasis should be given tractors.

"Instruction in farm building and farm conveniences is essential to the best development and the future of Maryland farms. For the fiscal year beginning October 1, 1921, an assistant professor of farm conveniences will be needed. A course in agricultural engineering should be offered beginning October 1, 1920. There is a big demand for the agricultural engineers at the present time, and no colleges in the East are giving strong courses of this kind.

"By having three more men, beginning October 1, 1920, the Department can be well organized by October 1, 1921, and at that time additional men as mentioned in the schedule should be added.

"Supplies and equipment for October 1, 1920-1921, include tools, motors, fuel, oil, office and laboratory supplies, and equipment. Four thousand dollars (\$4,000) would be sufficient for that year. For the following year, October 1, 1921-1922, five thousand dollars (\$5,000) should be appropriated for the same kind of supplies and equipment.

"The land for laboratory purposes should be available to the amount of ten or more acres, so that the student can be given an opportunity to operate the different machines. This land should be under the complete control of the Department of Farm Equipment."

An Agricultural Engineering building is urgently needed. This Department is now using space in the Agricultural Building not suited to the Agricultural Engineering work. The space now used was built for a livestock class room and will be required next year for that purpose.

THE DIVISION OF ANIMAL INDUSTRY

R. C. REED, *Dean*

There has been a greater demand upon the staff and the resources of this Division during the past year than ever before. With a full professor at the head of the departments of Animal Husbandry, Dairy Husbandry and Bacteriology, it has been impossible to meet all demands either in teaching or in the State at large. A total of twenty-five (25) courses, representing eighty-one (81) credit hours, have been given in Animal Husbandry, Dairy Husbandry, Bacteriology, and Veterinary Medicine, with a total enrollment in all courses of three hundred and nineteen (319) students during 1918-1919.

The members of the staff have attended numerous conferences and have conducted numerous investigations both in the field and here at the College, and many more would have been undertaken if we had facilities in the way of a larger staff and a larger fund for maintenance, equipment, and traveling expenses.

An additional teacher is needed in both the Animal Husbandry and in the Dairy Husbandry Departments. Two more clerks are needed to take care of the greatly increased routine office work. Further needs are outlined in the reports of the head of each department.

In addition to his routine duties, the Dean has taught the courses in Veterinary Medicine and for a part of the year 1917-1918 gave the course in Bacteriology, besides making numerous field investigations regarding communicable diseases of animals in Maryland. Several calls for help from other States have been responded to. Several conferences and meetings of learned societies have been attended. Altogether more than one hundred (100) trips into the field for investigation and to various society meetings and conferences bearing on the work have been made.

The need of funds for expansion, as well as for carrying on the routine work as now outlined, is very great.

The School of Veterinary Medicine will require at least four additional full professors, as well as equipment and buildings. For the first year about seventy thousand dollars (\$70,000) will be needed, and as the school grows more buildings will be needed, as well as additions to the staff and equipment.

After the first year the maintenance expense will be of necessity materially increased. Arrangements should be made so that the new members of the staff of the Veterinary School will be on the

ground not later than July 1 to get their laboratories ready and their courses outlined in time for the opening of the College in September.

For the present, six departments will be necessary in addition to the courses which will be given by the various departments of the College. These departments would probably be somewhat as follows:

Department of Pathology and Bacteriology.

Department of Anatomy and Physiology.

Department of Medicine.

Department of Surgery and Obstetrics.

Department of Materia Medica and Pharmacology.

Department of Infectious Diseases and Jurisprudence.

Provision must be made for operating room and hospital, anatomical laboratory, and unless the entering class is limited to freshmen, laboratories will be needed for physiology, pharmacology and histology, and pathology at the opening of the next College year.

It will be necessary to provide for teaching the following subjects:

Physics
Histology
Anatomy
Physiology
Chemistry
Pharmacology
Materia Medica
General Pathology
Bacteriology
General Surgery
Physical Diagnosis
Zoology
Clinics
Surgical
Medical
Small Animal
Ambulatory

Medicine
Post Mortems
Special Surgery
Special Pathology
Parasitology
Infectious Diseases
Urine Analysis
Embryology
Horse Shoeing
Immunity
Botany
Meat Inspection
Dairy Inspection
Obstetrics
Ophthalmology
Hygiene
Animal Husbandry

As soon as arrangements can be made for financing the school, an announcement of the school should be published and the faculty selected so that they can begin planning their courses for the first year.

LIVE STOCK SANITARY, BIOLOGICAL AND BACTERIOLOGICAL LABORATORIES

E. M. PICKENS. *In Charge*

The hog cholera and serum experiments, the manufacture and distribution of the biologics, viz: tuberculin, mallein, autogenic bacterins, and anti-hog cholera serum and virus, as well as the sale of syringes, thermometers and disinfectant, are provided for by the funds of the Biological Laboratory of the Experiment Station.

The Laboratory diagnoses and the field trips are under the Live-stock Sanitary Section, and the teaching and some of the research work properly fall under the Bacteriological Laboratory of the College.

Our staff has supplied both medical and surgical care for the animals belonging to the College and Experiment Station for the past two years. Numerous professional visits have also been made to many of the farms in the immediate vicinity of the College. During the past year the laboratories have taken over the water analysis for the institution, and have made numerous examinations of samples of water for individuals.

Teaching

From October 1, 1918, to August 1, 1919, Dr. C. C. Shivers and Dr. Pickens made up the Laboratory staff for the Live Stock Sanitary, the Biological and the Bacteriological (teaching) Laboratories. On August 1, 1919, Drs. M. F. Welsh and K. F. Menzel were added to the force.

The course of General Bacteriology was entirely revised, as may be seen by the 1919-1920 catalogue of the College. Dairy Bacteriology, a new course, was also outlined, as well as Advanced Bacteriology; Bacteriology No. 1 (Agricultural for short course students) was revamped and will be given this year for the first time in its new form.

Due to lack of equipment and the necessity of moving the Bacteriology Laboratory from the Experiment Station to the Agricultural Building, it became necessary to restrict the students taking General Bacteriology to the seniors. We were greatly handicapped in handling even these, as the work was necessarily confined to lectures during the first term. At the beginning of the second term, water and gas were installed and laboratory work was instituted. This was continued throughout the school year. During the second term Bacteriology No. 1 was taught to a class of twelve short course students.

For the coming year we will have to teach about sixty students in General Bacteriology. This will necessitate the handling of four Laboratory sections of two Laboratory periods each a week, as well as the lectures. In Agricultural Bacteriology we will probably have about the same number of students as last year. It is impossible to estimate the number of students for Dairy Bacteriology at this time. The same is true of Advanced Bacteriology, but the course will be given, as we have already had requests for it.

Equipment

During the year we have been able to purchase quite a number of pieces of indispensable apparatus, together with a small stock of supplies and some Laboratory furniture. The more important pieces of apparatus include an autoclave, two centrifuges, sterilizers, pressure pump, vacuum pump, pressure and vacuum filters, camera, traveling microscope, microtome, hood, three incubators, serum coagulator, water bath, inactivator, paraffin kit, water and alcohol stills.

The supplies include most of the necessary chemicals for bacteriological and pathologist work, together with a fair assortment of stains, filter paper, glassware, packing boxes, mailing cases, disinfectant, and surgical instruments such as knives, forceps, hypodermic syringes and needles.

The Laboratory furniture includes twenty laboratory desks, two office desks and chairs, four sets of steel stacks, wardrobe, dictionary stand, filing cabinet, chemical cabinet, sterile glassware and media cabinet, dissecting table, and a few reference books. This equipment makes a most excellent foundation for a laboratory and makes possible a number of lines of work which would otherwise be impossible.

Research

At present we have three projects in progress. Experiment No. 1 was undertaken for the purpose of determining the best time to immunize hogs against cholera by the simultaneous method, and also the length of time this immunity may be expected to last. Experiment No. 2 was undertaken to determine the age at which young pigs from immune mothers may be expected to become susceptible to hog cholera, and therefore when treatment should be used in case of possibility of exposure to the disease. It is planned to obtain data on five hundred hogs for each of these experiments. To date, we have results on about one hundred on each experiment.

Experiment No. 3 was undertaken to determine the reliability of the Strauss method of diagnosis for glanders in horses. This consists in inoculating male guinea pigs with known strains of *Bact. mallei* and checking up the results by post mortem and bacteriological examinations. We expect to base our conclusions on the results obtained from one hundred strains of the organism. At present we have results on six animals.

In addition to these, we are contemplating starting in the near future some experiments on contagious abortion in cattle; another on the filterability of anti-hog cholera serum, looking toward the possibility of working out a practical technic whereby a sterile clear serum may be prepared. This would be a very important step in advance, as no method has thus far been published which will enable an individual to prepare an absolutely sterile product. This point is becoming more and more important as our knowledge of contagious abortion and certain other diseases in hogs (especially tuberculosis) increases, as it is becoming clearer that transferring large quantities of blood from one hog to another without sterilization may transfer other things besides immune bodies.

Publications

Two articles in the form of case reports on animal diseases, viz, "Black Leg in Cattle" and "Parasitic Infestation in Swine," have been written and published in a scientific Veterinary Journal. Another

article, entitled "Instructions to the Patrons of the Maryland State Live Stock Sanitary and Biological Laboratories," has been written and now is in the process of publication. Still another, entitled "Rural School Sanitation," has been written and presented for publication.

We are planning on getting out three others in the near future—one to be on "Necroferus Infection in Swine," another on a cattle disease which we are now studying, and a third on "Forage Poisoning in Horses."

Laboratory Diagnosis

The plan for the Live Stock Sanitary Laboratory was completed early in September, 1918, and orders were placed for as much apparatus as there were available funds to cover. On account of war conditions and the lack of funds, much needed apparatus could not be obtained. The shipment and delivery of the material secured were also very slow, so that most of our Laboratory equipment was not placed until after February 1, 1919. There are still many things very badly needed, and as these will of necessity have to be added from maintenance funds, the process will be a rather slow one; but on the other hand, in about three years I believe we will have not only the largest but as well equipped a Bacteriological and Pathological Laboratory as there is in the country.

The following table gives the diagnosis made at this Laboratory since September 1, 1918:

<i>Kind of Animal</i>	<i>Disease Suspected</i>	<i>Diagnosis</i>	<i>Place</i>
Turkey		Black Head	College Park
Hog	Cholera	Parasites (Echinoin chus gigas)	College Park
Homo	Boils	Boils (Autogenic Bact.)	College Park
Sheep		Colon Septicemia	Easton
Hens		Roup	White Marsh
Hogs	Hog Cholera	Hog Cholera	College Park
Cattle		Ring Worm	Hagerstown
Mules		Mange	Hagerstown
Hogs		Hog Cholera	Hagerstown
Hogs		Hog Cholera	Hagerstown
Hogs		Hog Cholera	Hagerstown
Hogs		Hog Cholera	Anacostia
Hogs		Inf. with Bac. Pyogenes	Laurel
Hogs		Incarcerated Hernia	College Park
Hogs		Swine Plague	College Park
Hogs		Parasites and Cholera	Rocks

<i>Kind of Animal Disease Suspected</i>	<i>Diagnosis</i>	<i>Place</i>
Water	Monthly Examination	For the College College Park
Cows	Infectious Mastitis..	Streptococcic Mastitis College Park
Hogs		Hog Cholera Silver Springs
Cows		Flatulence College Park
Hogs		Kidney Worms College Park
Dogs	Rabies	Rabies Hyattsville
Dogs	Rabies	Rabies Hagerstown
Hog	Mange	Burned with oil... Branchville
Horse	Mange	Mange Hagerstown
Chicks		Bacillary White Diarrhea Baltimore
Cows	Susp. Anthrax	Neg. to Anthrax... Dorsey
Hogs		Hog Cholera Berwyn
Cows	Septic. Hem.	Neg. to Septicemia Hemorrhagia Baltimore
Ducks		Probably Heat Stroke College Park
Goat		Bitten by Dogs.... College Park
Cattle		Forage Poisoning .. Brown Station
Hogs	Hog Cholera	Neg. to Hog Cholera Brookland
Cattle	Infectious Mastitis..	Streptococcic Mastitis Long Green
Dogs	Rabies	Neg. to Rabies Hyattsville
Hogs		Hog Cholera Hyattsville
Sheep	Anthrax	Stomach Worms ... Rockville
Canary Birds.....		Hemorrhagic Enteritis Hyattsville
Hogs	Rabies	Neg. to Rabies College Park
Cattle		Hemorrhage due to Castration ... Washington
Calves		Calf Pneumonia ... Ecclestone
Cows	Texas Fever	Forage Poisoning... Leonardtown
Canary Birds.....		Enteritis Hyattsville
Dogs	Rabies	Rabies College Park
Cattle		Forage Poisoning... Solomon's Isl'd
Cattle		Forage Poisoning... Sollars
Cattle		Black Leg College Park
Canary Birds.....		Enteritis Hyattsville
Hogs		Hog Cholera Clarksville
Cows	Criminal Poisoning.	Neg. to Criminal Poison Hagerstown
Cows		Forage Poisoning... Brown Station
Dogs	Chronic Dog Distemper	Bacterin Prepared.. Washington
Dogs		Infested with Fleas. Washington

<i>Kind of Animal Disease Suspected</i>	<i>Diagnosis</i>	<i>Place</i>	
Canary Birds.....	Hemorrhage due to Molting	Hyattsville	
Calves	Calf Pneumonia ...	Eccleston	
Cows	Forage Poisoning...	Leonardtwn	
Hogs	Hog Cholera	Knollwood	
Hogs	Hog Cholera	Neg. to Hog Cholera	Beltsville
Horses	Mange	Mange	Hagerstown
Ducks	Heat Stroke	College Park	
Horses	Diarrhea	Dietary	Baltimore
Hogs	Hog Cholera	Neg. to Hog Cholera	Branchville
Dogs	Tumor	Cancer	Berwyn
Ducks	Heat Stroke	College Park	
Hens	Dietary	Hyattsville	
Hogs	Hog Cholera	Croom	
Hogs	Swine Plague	Croom	

Field Investigations

Besides the diagnoses made in the Laboratory the following field trips and investigations have been made since September 1, 1918, by members of the staff of this Laboratory:

<i>Animals Examined</i>	<i>Diagnosis</i>	<i>Place</i>
Hogs	Hog Cholera	Brentwood
Cows	Contagious Abortion	Silver Springs
Hogs	Improper Diet	Branchville
Cattle	Forage Poisoning	Leonardtwn
Cattle	Forage Poisoning	Leonardtwn
Hogs	Hog Cholera	Croom
Cattle	Forage Poisoning	Leonardtwn
Cattle	Forage Poisoning	Solomons Island
Cattle	Forage Poisoning	Sollars
Cattle	Black Leg	Cox's Station
Horses	Forage Poisoning	Chesapeake Beach
Horses	Forage Poisoning	Bel Alton
Horses	Forage Poisoning	La Plata
Horses	Forage Poisoning	Bel Alton
Horses	Forage Poisoning	Bel Alton
Cattle	Black Leg	Chappel Point
Cattle	Black Leg	Bel Alton
Cattle	Thrush Foot	La Plata
Dogs	Rabies	Hyattsville
Cattle	Black Leg	Cox's Station
Hogs	Necrophorus Infection	Laurel
Cows	Actinomyccis	Eccleston

<i>Animals Examined</i>	<i>Diagnosis</i>	<i>Place</i>
Hogs	Mange	Millersville
Hogs	Hog Cholera	Forestville
Horse	Diseased Tooth	Upper Marlboro
Hogs	Hog Cholera	Tacoma Park
Hogs	Necrophorus Infection	Millersville
Cattle	Black Leg	Golden Hill
Cattle	Black Leg	Bel Alton
Cattle	Black Leg	Bel Alton
Cattle	Black Leg	Bel Alton
Cattle	Black Leg	La Plata
Cattle	Black Leg	La Plata
Hogs	Hog Cholera	Berwyn
Hogs	Hog Cholera	Windham
Hogs	Hog Cholera	Forestville
Cattle	Black Leg	La Plata

Biologics

As the records for the fiscal year 1917-1918 are so incomplete, it is impossible to state the amount of anti-hog cholera serum produced or the amount which after testing showed a sufficient potency to warrant its sale. In addition to that made at the Laboratory, a certain amount was purchased. The total quantity supplied to the farmers of the State as shown by the available records and estimated was 500,000 c.c. About 1,700 c.c. of virus was also used.

For the year 1918-1919 more than sixty-two (62) gallons of disinfectant (Compound cresol), five thousand six hundred and thirty (5,630) c.c. of virus, one hundred and nineteen (119) serum syringes, and sixty-one (61) thermometers were distributed from this office. The following table shows the amount of serum sent out during the same period to the various counties:

OCTOBER 1, 1918—SEPTEMBER 30, 1919

<i>County</i>	<i>Serum</i>
Allegany	none
Anne Arundel	20,050
Baltimore	1,800
Calvert	21,250
Caroline	900
Carroll	none
Cecil	4 000
Charles	27,825
Dorchester	89,500
Frederick	8,800
Garrett	3,500

<i>County</i>	<i>Serum</i>
Harford	2,250
Howard	20,950
Kent	83,300
Montgomery	58,025
Prince George's.....	39,800
Queen Anne's.....	26,800
St. Mary's	83,420
Somerset	143,875
Talbot	34,450
Washington	21,300
Wicomico	55,250
Worcester	42,550
Out of State	27,725
L. S. S. Section	471,250
Total	1,288,570

In addition to the above, we have supplied the State Board of Agriculture for their use 100 doses of mallein and 1,348 doses of tuberculin. Both of these products are now being manufactured in quantity and we are prepared to supply the demands of the State for both private and official work. Also, 14,400 c.c. of serum, 56 c.c. of virus and three gallons of disinfectant have been supplied gratis for demonstration purposes in the State.

Needs of the Laboratory

With the opening of the Veterinary School several new subjects such as Histology, Embryology, Parasitology, Post-Mortem Examinations and general and special Pathology will have to be given by this Department. This will necessitate the addition to our staff of at least one more full-time man. His salary should be from \$2,500 to \$3,000 per year.

It will also be necessary to employ a clerk for the Laboratory who will be able to devote her full time to this work. Such a person must, of course, be a stenographer, and in addition she should keep our books. She must know something of library filing methods. This will require a salary of about \$1,200 per year.

Six new microscopes are badly needed, together with sixteen one-eighth-inch objectives, to complete our microscopic equipment. This will cost about \$700.

A reference library, together with a subscription list of all the good medical and veterinary scientific periodicals, is also a necessity. A fund of \$2,000 to be used in the purchase of reference and textbooks should make a very modest beginning, and \$500 per year after that should take care of the new books and the periodicals. Complete files of the more important periodicals should be obtained, and the

current numbers should be bound into volumes for later reference work.

Other items that will have to be considered in the near future are an incinerator to take care of dead animals, a photomicrographic apparatus, re-wiring the Laboratory for placing a microscopic lamp on each student's desk, and last, more room in the Laboratory to allow for expansion which will be necessary with large classes, and also several small rooms to be used as office laboratories for graduate students.

DEPARTMENT OF DAIRY HUSBANDRY

J. A. GAMBLE, *In Charge*

During the present school year Mr. Gamble, the Professor of Dairy Husbandry, has taught among other subjects dairy management, including production and feed records; care, feeding and handling of the dairy herd for milk quantity and quality; the cost of milk production; dairy production and barn practice, including the mixing of feeds and the feeding and milking of dairy cows; the advantages and requirements for advanced registry testing; the value of pure-bred cattle; the organization and value of cow testing and bull associations; practical application of best methods for the production of milk; care and handling of milk and cream on the farm; requirements of the city milk trade; methods and standards for certified milk production, and other milk subjects, including pasteurization, separation and analyses of milk and milk products. During the fall term a course in food and nutrition was organized for the Students' Army Training Corps.

Aside from the regular teaching work at the College a great deal of time during the past year has been given to the Co-ordinating Committee and to the answering of an increased correspondence.

During the year feeding work was started and completed, looking toward the digestibility and comparative feed value of cocoanut meal.

Every effort has been made to assist G. A. Billings in getting his sub-project cost of milk production organized in such a way that this work will be of the utmost value to the dairy industry of the State.

After some little delay we were able to secure the necessary funds, and have installed in our dairy milk-cooling tanks a milk-cooling arrangement which we consider a model of its kind and which can be recommended to the dairymen of the State of Maryland.

During the year we have spent some time assisting with the feeding, care and management of our present dairy herd, although opportunities in this line have been somewhat restricted.

During the year the following courses have been given:

<i>Name of Course</i>	<i>Attendance</i>
Fall Term—Food and Nutrition.....	44
Winter Term—Dairying No. 2.....	21
Dairy Management No. 113*.....	18
Live Stock Management No. 102*.....	14
Market Milk No. 115.....	9
Spring Term—Farm Dairying No. 114.....	7
Milk Hygiene No. 117.....	6
Dairying No. 2.....	7
Summer School—Judging of Dairy Products D. H. 108.....	12
<hr/>	
Total number of students.....	138

*Half term—balance with Professor Meade.

Another service has been the carrying on of advanced registry testing for the Guernsey, Jersey, Holstein and Ayrshire breeders of Maryland. This has meant furnishing testers monthly to thirty-three different breeders in the testing of more than two hundred and eighty (280) different cows. Mr. Wolcott and others rendered most valuable assistance in this work.

Field Work

The Field work has consisted of addresses to the different breed associations within the State, work with the Maryland State Dairymen's Association, and the attendance at more than sixty meetings and conferences held in the interest of the dairy industry of the State of Maryland.

More than forty conferences have been held with the Dairymen's Association in Baltimore regarding the advancement of dairying. This Association now has among its members about two-thirds of the farmers shipping milk to Baltimore City. We assisted in arranging for the purchase of milk on a butter-fat basis, beginning October 1 of the present year, and the establishment of a central laboratory for making the tests upon which the monthly price to each shipper is based. The system seems to be working out all right, and is being still further perfected from time to time as opportunities permit.

At the request of the Dairymen's Association and the Baltimore Milk Bottler's Exchange, Mr. Gamble accepted the chairmanship of the Laboratory Board, which has supervision over all tests made in this central laboratory.

Several visits have been made to Cumberland, Md., to assist the Extension Service of the College, and the dairymen of Allegany County to take over the distribution of milk in Cumberland. They have purchased a plant large enough to handle the growing business in that municipality. It is apparent that we have in this plant pioneer work in city milk distribution.

At Columbus, Mr. Gamble was Superintendent of the Milk and Cream Exhibit and judge of milk and cream at the National Dairy Show held in October of last year. In spite of war conditions, the exhibit was the largest ever held by the National Dairy Organization.

Publications and Manuscripts

During the year the following manuscripts by co-workers and Mr. Gamble have been published: "Cooling Milk and Cream on the Farm," Farmers' Bulletin No. 976; "Straining Milk," Farmers' Bulletin No. 1019; "Cooling Milk and Scoring and Shipping It at Low Temperature," United States Bulletin No. 744; "Cooling and Handling of Milk on the Farm," published by the New York Dry Milk Company of Hagerstown, Md.; "Maryland Milk Cost Survey," with Messrs. Bomberger, Wolcott and McLaughlin; "Dairy Farm Inspection Committee Report," International Association of Dairy and Milk Inspectors.

Manuscripts in Process of Publication

Names and location of Maryland breeders of pure-bred dairy cattle, beef cattle, horses, sheep and swine, with Professor Meade; the effect of feeds on the flavor and odor of milk, with Ernest Kelly, of the United States Dairy Division. Several articles bearing on the dairy situation and improving the dairy stock of the State have been published in *The Maryland Farmer* and other publications.

Present Plans

The immediate work now before the Dairy Husbandry Department is to at the earliest possible moment make such arrangements as will permit the best teaching of the courses in dairy husbandry outlined in the new catalogue. These include: Principles of Dairying (See A); History and Development of Dairy Cattle (See B); Dairy Production (See C); Farm Dairying (See D); Market Milk (See E); Advanced Milk Testing (See F); Commercial Dairying (See G).

(A.) The relationship of dairying to general agriculture; the extent of the dairy business and value of dairy products; milk, its secretion, character and composition, methods of testing for butter fat and for total solids.

(B.) A study of the origin, history, development and characteristics of the dairy breed; requirements for advanced registry; the value of official records; bull associations, cow testing associations.

(C.) Feeding and handling cows for maximum and economic production; the keeping of feed records and production records; cost of milk production; the work of the herdsman from the standpoint of production; standard rations for dairy cows from the standpoint of feeding practice; barn practices which influence quality and quantity in milk; economic arrangement of dairy plant, and construction of the different dairy farm buildings.

(D.) Composition of milk, butter and cheese; equipping the stable and milk house; how bacteria and dirt get into milk; how they may be kept out; surface coolers and pre-cooling; milk cooling tanks; washing and sterilization of utensils.

(E.) A study of market milk conditions; city milk and cream regulations; requirements of city milk trade; improvement of milk supplies from the community standpoint; the production of milk for special trade, as baby's milk pasteurized, inspected and certified milk; milk and its relation to the public health; the food value of milk; methods of handling market milk and market cream for direct consumption; the transportation of milk; Babcock testing of milk and milk products; testing for acidity, preservatives and adulterations. In this course visits will be made to the dairies and to milk plants.

(F.) This course includes the determination of moisture and dry matter in milk and dairy products; various tests for fat and casein; testing of butter and oleomargarine; adulterations and preservatives; the scoring of milk and cream.

(G.) Power separators; pasteurizers; churns and butter workers; the ripening of cream; churning, washing, salting, working, packing, scoring, and selling butter.

In order to do justice to the above courses, the available facilities now at this institution will have to be worked hard; arriving at an arrangement which will permit the greatest use of these facilities is the first and most important present effort of this Department. To this end, we court the heartiest cooperation of all men, means and equipment now at the College in its different divisions.

Second—It is necessary that we have sufficient teaching and clerical assistance, and such support as will enable the Department to take advantage of every opportunity for the advancement of the value of the above courses to the students taking them; to keep in touch with similar work at other institutions, to ascertain the true state of affairs in the dairy industry of the State of Maryland, and to render that industry the greatest possible service through the Extension Division of the institution.

Future Work—College

In order that the Dairy Husbandry Department may develop and become what the College and the State of Maryland wish it to be, it is necessary that more land, building, equipment and stock be secured for the dairy husbandry plant of the College. These are necessary for the teaching of the dairy husbandry courses already in the catalogue and such others as may from time to time be added to the curriculum as their needs become apparent. We confidently look forward to the time when the College will be equipped better to teach the dairy students how to feed cows, keep milk and feed records, increase milk production, ascertain the cost of production, and produce quality in milk through actual work in these dairy practices in our dairy barn

here at the State College. We hope to teach students how to make better pasteurized milk, separate milk, analyze milk and milk products, make ice cream by practice in these dairy arts in our own dairy manufacturing and testing laboratories.

Until these contemplated improvements become realities, it seems essential that we make such arrangements as will permit the greatest use of the present dairy husbandry resources of the institution. This will necessitate making such alterations as will improve the efficiency, appearance and teaching value of the present dairy farm buildings, dairy stock, and milk produced. It is realized that the present dairy plant has been conducted along the experimental lines and has lent itself to that purpose to the satisfaction of those who have so successfully carried on this research work.

Extension

Inasmuch as the future development and financial success of dairying in Maryland depend (1) upon still further perfecting the organization of the milk producers of the State; (2) upon increasing the average production of milk per cow per year, and thereby lessening the cost of production; (3) upon increasing the quality of the production and educating the consumer to appreciate the food value of relative cheapness of milk when considered from a food-value standpoint, and (4) upon providing means for the most advantageous handling of milk surpluses as they occur, the following extension work should be organized and systematically carried forward by all workers in dairy husbandry in this institution through the Extension Service of the College.

To this end, as men and funds permit, it is suggested (1) that, inasmuch as there seems little likelihood of the milk producers of Maryland getting for milk the actual cost of production plus a reasonable profit without complete organization, it seems desirable that every legitimate assistance be rendered the Maryland State Dairymen's Association and Virginia and Maryland Association in the perfection of their organizations, and that these two organizations be somewhat closely affiliated. If the past is any criterion, organization of dairymen seems essential if dairying in the State is to be a sound financial undertaking. Unless it be a sound financial undertaking, we here at the College are not justified in encouraging young men to come to the State College and take up dairying as a profession. (2.) An effort should be made to get together the breeders of pure-bred cattle in this State, especially those who have advanced registry animals. It would also be well if arrangements could be made with such breeders for the purchase of their pure-bred bulls and calves from high-producing dams and the placing of these in bull association blocks throughout the State. This is a movement to which all the dairy talent in the College could well lend itself in assisting Mr. Wolcott, of the Extension Service, who has this project in charge. Perhaps no single effort for the same

expenditures would bring greater results in increasing the production of milk per cow in this State. (3.) To encourage the growing and feeding of more legumes and home-grown grains on Maryland farms, the cooperative buying of feed, and the better feeding of dairy cows. Regardless of pedigree and high production of ancestors, no cow was ever known to give a pound of milk from anything else but feed. (4.) With the increased and lessened cost of production and the securing by Maryland producers of the cost of production plus a reasonable profit will come increased interest in the proper care of milk. In Maryland, dairymen can produce milk of better quality and produce it more economically than it is produced elsewhere; we need not fear for markets for all we can produce. (5.) Conducting through the Extension Service such milk educational campaigns among women's clubs and public schools of the State as will result in increasing consumption of Maryland milk. (6.) At an early date to conduct a milk house, milk-cooling and storing campaign for the purpose of assisting dairymen to cool more efficiently with the means at hand, and prevent the deterioration and financial losses now resulting from lack of proper cooling and storing. (7.) To assist the different units of the Maryland State Dairymen's Association in the organization of country receiving stations, so that surpluses may be handled more economically than at present. To advocate the broadening of the directorate of that Association, so as to include a representative of each local unit. (8.) To cooperate with and assist the County Agents of the State in every possible manner with their dairy husbandry problems. (9.) To cooperate with and support in every way the leader of boy club work in the State of Maryland with his dairy husbandry projects among Maryland boys.

Educational

The offering of dairy husbandry articles for publication in the leading dairy, breed and milk journals of the country, including Hoard's Dairymen, Maryland Dairy Farmer, Kimball's Dairy Farmer, Guernsey Breeders' Journal, Jersey Bulletin, Holstein-Friesian World, Ayrshire Quarterly, Milk Trade Journal, Milk Dealer, Milk Produce Reviews, and other farm and dairy papers. (2.) To carry on advanced registry work in the State of Maryland and through educational work bring about more of such testing.

Biennial Estimate

In view of the dairy husbandry work at this institution in process and in contemplation, it would seem necessary for the best teaching of the subject and the securing of additional information in dairy husbandry matters for the dairymen of the State that the funds of this Department should be materially increased. After going into the situation rather thoroughly I trust that, beginning October 1, 1920, sufficient funds will have been made available to purchase additional

land, erect dairy buildings, buy sufficient dairy apparatus to equip our manufacturing laboratory, and hire four additional workers in dairy husbandry.

DEPARTMENT OF ANIMAL HUSBANDRY

DEVÖE MEADE, *In Charge*

During the fiscal year of 1918 and 1919 courses of instruction were given in the following subjects: General Animal Husbandry, Live-stock Management, Principles of Breeding, Animal Nutrition, Advanced Stock Judging, Hog Production, Sheep Production, Dairy Management, Farm Poultry, Breeds and Judging, Feeds and Feeding, and Farm Poultry.

A course in Hog Production was given during the second term, and again during the Summer School session. The Course in Feeds and Feeding was given during the second and third terms.

Counting the courses which were duplicated during the year as just mentioned, fourteen separate courses of studies were offered and a total of forty credit hours of work was given by the Animal Husbandry Department during the year 1918 and 1919. A total of one hundred and forty-five (145) students were in attendance in these courses. This attendance is very favorable for the Department when one considers the status of the College during the period of the war and also the situation at the College after the demobilization of the Students' Army Training Corps.

In addition to the regular College courses, a considerable amount of time has been given by the Department to the training of a students' judging team, consisting of three students who represented the Maryland State College in the Students' National Contest in Judging Dairy Cattle at the National Dairy Show in Chicago, Ill., on October 6.

Within the past year Dr. DeVoe Meade, Professor of Animal Husbandry, has been present at twelve meetings held in various parts of the State, and has addressed a total of about three hundred (300) persons. The topics discussed at these meetings covered such phases of animal husbandry as the Feeding of the Dairy Cow, Pedigree and Individual Merit in Selection, Development of the Beef Breeding Herd, Necessity for Organization and Cooperation Among Dairymen, and Type and Selection in Swine.

The Professor of Animal Husbandry has, from time to time, written articles for publication in the State College Journal and The Maryland Farmer. A dairymen's feeding schedule is being run monthly in The Maryland Farmer by the Department. Other articles published by the Department have had reference to such topics as the future of the horse industry, milk prices, and systems and methods of breeding.

At present the time of the head of the Department of Animal Hus-

bandry is so completely occupied with lecture and laboratory work and with attention to the details of the Department that very little time remains for constructive thinking, organization, and administrative functions. One of the present needs of the Department, therefore, is additional instructional force.

The most serious criticism of the Department of Animal Husbandry as it is now organized is the lack of suitable laboratories, laboratory equipment, and stock for educational, demonstrational and investigational purposes. Before the lecture work can be properly and adequately supplemented by laboratory and practice work, laboratories, equipment and stock must be made available. Such equipment is also necessary if graduate and research work is to be offered by the Department.

At present the Animal Husbandry Department is handicapped by the lack of suitable and sufficient stock, horses, cattle, sheep and swine for educational and investigational purposes, by the absence of a meat and meat products laboratory, a feed laboratory, a pedigree room with its accompanying herd books, flock books, record books, and stud books, and by the unavailability of a stock-judging pavilion.

The addition of stock of the various classes to the Department will necessitate, of course, the purchase of land and the erection of suitable buildings for housing. While it is recognized that the demands of the Department are extensive, it is hoped that these needs may be satisfied as rapidly as circumstances will permit.

The School of Engineering

T. H. TALIAFERRO, *Dean*

In so far as the School of Engineering is concerned, the years 1917-1919 have been a period of unrest and uncertainty. These conditions applied to the students, the staff of instruction, and the policy of the School.

The students spent a large portion of their time debating whether they should continue their course, enter the army, or engage in some phase of employment intimately connected with the prosecution of the war and generally very remunerative. Many left the College, and it was difficult at times to persuade those who remained that they would be of more service to their country if they finished their education. If convinced, they found it very difficult to apply themselves when so much of world-wide interest was occurring. The establishment of the Students' Army Training Corps was of great value in retaining the student body. The courses in Engineering, established by the Committee on Special Training, corresponded fairly closely with those established by the Faculty of the College. The main difficulties arose from the subordination of the scholastic to the military work and the feeling among the students in Engineering that, in comparison with those selecting the hybrid courses established for infantry, motor transportation, etc., they would not have an equal opportunity for advancement in the military service. This feeling was dispelled after a conference with the military authorities by an official statement that all students would be given equal opportunities for service. Under the regulations established for entrance in the Collegiate Courses by the Committee on Special Training, a fine body of men was selected for the Engineering Courses; for from between one hundred and seventy-five and two hundred applicants, less than seventy-five were accepted as fully meeting the requirements. After the Students' Army Training Corps was disbanded, the remainder of the school year was spent in developing the students so that they might pursue successfully the regular Collegiate Courses in Engineering. On the whole, it may be stated that most of the students did all that could be expected of them under the existing extraordinary conditions.

As to the staff of instructors, the demand for technical men in war work, the desire to enter the army, and the financial pressure arising from the increase in the cost of living made it very difficult to hold a sufficient number of men to do the teaching required. Only the loyalty of those employed, who sacrificed their financial interests

and their personal desires, and burdened themselves with a large amount of extra work, made it possible to "carry on." All honor should be given them as men who served.

The main policy of the School was to develop its students into valuable men in spite of the many difficulties; to meet the demand for men with some technical training during the war period, courses in several phases of Mechanic Arts being offered to students whose scholastic qualifications were limited and also to those who wished to prepare themselves quickly for service. The future of these courses is problematical, as there is some doubt as to their utility in times of peace. The extent of the demand for such courses will probably determine their fate. In regard to the future, plans were made to develop, in addition to the general courses in Engineering, courses in Highway Engineering, Sanitary Engineering, Telephone and Telegraph Engineering, Radio Engineering, Production Engineering, and Steam Engineering. All of these are valuable in the economic development of the Nation, and bear a more or less close relation to the problems of rural communities, and, therefore, to the welfare of the entire country. At the same time, they afford a good field for advancement to qualified graduates.

The School Staff

The School has always been undermanned as to its teaching staff, its office force, and its force for the care of buildings and equipment. These conditions must be remedied if the School is to develop with the remainder of the institution. More teachers are needed in every department at present, and with the prospect for a much larger student body, as indicated by the increase this fall, the demand for an increase in the staff of instructors will become more pressing each year. Trained mechanics are needed to teach in the laboratories and shops, and to care for the valuable equipment which is deteriorating for lack of the proper care as to repairs and upkeep. A stenographer and clerk is needed to take care of the correspondence and to do such other clerical work as is necessary for the proper conduct of the affairs of the School.

Instructors at present should be employed to undertake teaching and extension work, and when the Experiment Station is established, to engage in research. Although the teacher should be capable of extension work, he should not be required to enter upon it except in so far as it does not interfere with his teaching, which is the primary object for which he is engaged. Further, a line should be drawn as to the type of extension work which is to be undertaken, for it is obviously unfair to engage in work of a character which will interfere with the engineer in practice. There are, however, many problems of a general and of a particular character for which a practical Engineer would not be employed, and these may properly claim the attention of the College Staff.

The specialists on the Engineering Staff should be permitted, under proper regulations, to undertake consulting work; for with this concession, and the proximity of the College to Washington, it will probably be possible to employ Engineers of note who will reflect credit on the School and also attract many students.

It is believed that all members of the staff should be employed on a twelve months' basis, with one month holiday, since this gives some control over the manner in which the instructors spend their summers outside of the month holiday. Practical experience is absolutely essential for the proper teaching of Engineering; therefore, at the close of the two weeks' Engineering Summer School, which has been advertised for some years, and which it is hoped to institute next June, the instructors in Engineering should be allowed to accept positions for the summer which offer an opportunity to obtain the experience they need. Further, no Engineering work which would require their presence should be offered in the six weeks' Summer School. As to the teachers of Mathematics and Physics, they should be permitted to teach in the six weeks' Summer School only if their physical condition permits, for many conscientious teachers are "all in" at the end of the regular session and need a rest. Further, they should receive remuneration for this work, as in other institutions. As a matter of fact, this is one of the few institutions in the country in which teachers are required to teach in the Summer School without extra compensation, and in which Engineering instructors were unable, until this past summer, to obtain practical experience during the summer.

As to the six weeks' Summer School, it seems advisable at this point to suggest that no collegiate courses in Mathematics or Physics be offered, since they are only half courses at best, and the only demand for them comes from a few College students who have failed in the subject and hope to remove the failure in this way. Such students are, as a rule, more successful in removing a condition if they are required to pay for private instruction in the subject. Later, if there is a real demand for such short collegiate courses in Mathematics and Physics, they may be offered as well as the present courses in elementary Mathematics and Physics.

Salaries

A boy on being asked from what tax teachers were paid replied that teachers were paid from the dog tax; but one is tempted to believe that in some States they do not even get all of that tax. Apart from the question as to whether parents can afford to have their children taught by the grade of teachers which poor salaries will attract, the fact remains that teachers in the colleges who have spent much time and money in preparation must be paid at least a living wage. At the present time most of them are receiving less pay than a skilled mechanic, and many of them less than an ordinary

laborer. It is true that teachers, like preachers, need never hope to receive all their services are worth, but they should not be expected to make the financial sacrifices they make at the present time. Moreover, if salaries are not improved, the present teachers will enter other fields, and but few worth while will select teaching as a profession.

The financial sacrifices of the School Staff have been previously mentioned. The increase in the cost of living will not permit them to live as an instructor should. This naturally affects their efficiency, as financial stress, worry regarding the present and future welfare of their families, and, in some instances, insufficient or unwholesome food render it impossible for them to do their best work. When, for financial or other reasons, an instructor resigns, it is impossible to engage the services of his successor at anything like the same salary. This naturally reacts on the remaining instructors, who feel that they are not receiving the proper recognition for their services. The only thing that holds them in line is loyalty to the institution and the feeling of assurance that something will be done by the Administration and the Assembly to alleviate the situation. Further, as the School is undermanned and the number of students is growing rapidly, more teachers will be needed next year.

Equipment

The successful teaching of Engineering requires not only a large number of instructors, but a great amount of equipment. The School is inadequately equipped, in spite of the fact that with the limited funds at its disposal the greatest care has been exercised in the purchase of equipment for its fundamental needs. Nothing has been purchased except the best, and then only when absolutely necessary, rather than because of the desire to have a particular kind of apparatus. Much is still needed, of which the details are given under the reports of the departments.

Buildings and Repairs

The present laboratories, shops and classrooms are overcrowded, and the development of new laboratories, shops, etc., for the different courses renders it imperative to add to the space occupied by the Engineering school. In addition to the Engineering courses offered and outlined by the School, it is presumed that eventually other branches of Engineering will be attached to the School, and will occupy a portion of the space outlined, if it is vacant. Further, the growth of the student body will necessitate providing additional classroom, shop, and laboratory space. A sketch has been presented showing the additions requested. This sketch is based as regards the west wing on the removal of the old power plant; but if that is not feasible at present, coal storage space will be found in the basement of the addition. The cost of the addition is estimated to be \$125,000, and the cost of heating, \$10,000.

Small repairs and improvements in the present building will require about \$10,000, as the roof of the west wing is reported to be in bad shape.

Civil Engineering Department

In addition to the present force of instructors, an associate or assistant professor of Hydraulic and Sanitary Engineering is needed to take charge of that branch of the work. It might be possible to connect this work with the State Department of Sanitation, so that advanced lectures could be given by the State Engineer or some other thoroughly competent person connected with that Department. In that case, it would be possible to have the routine work done by the less experienced men.

The Departments of Civil Engineering and Mathematics should, as soon as possible, have separate heads.

There is at present no place in which to install a hydraulic laboratory, and no space for the other laboratories used in hydraulic and sanitary engineering. Space is also needed for the establishment of a highways laboratory. These are provided for in the proposed addition to the Engineering Building.

Equipment is needed for each phase of the work in Civil Engineering.

Electrical Engineering Department

The rapid growth of telephone systems, especially in rural communities, and the great development in wireless telegraphy and telephony during recent years offer a large field for the graduate in Electrical Engineering. Therefore, it is considered advisable, if not imperative, to develop the Department along these lines, giving courses in Telephone and Telegraph Engineering and in Radio Engineering, as well as in general Electrical Engineering as at present.

These options, the two-year courses in electricity, and the growth in the student body will require the services of an additional instructor. There should also be added to the Departmental staff an electrician to repair and keep up apparatus, which is deteriorating from use and lack of attention; to do the necessary wiring, to make simple laboratory apparatus needed in the laboratories, etc.

Relief from the crowded conditions of the present classrooms and laboratories and the proper housing of the new courses outlined in Telephone and Radio Engineering require additional space, for which provision has been made in the suggested additions. The space needed is as follows:

Radio laboratory, Telephone laboratory, Measuring Instrument laboratory, Illuminating Engineering laboratory, Wiring laboratory, Electrical Railway laboratory, Drafting rooms, three classrooms and two offices.

The equipment needed includes both the equipment necessary for the development of the new courses outlined and the advancement of the work in the present courses. It will be necessary within a short

time, on account of the condition of the present electric power equipment, to use current from the Potomac Electric Power Company for running the laboratories, and some of the equipment requested will make this possible.

Mechanical Engineering Department

The new era in commerce which the United States is entering has created a great demand for Marine Engineers. At the same time, the economic development of the country offers a large field for the graduate in Production Engineering. Therefore, it is deemed advisable to establish, along with the general course in Mechanical Engineering, courses in Marine Engineering and Production Engineering.

The crowded conditions of the shops, the lack of space for apparatus, the creation of laboratories for new courses, and the increasing number of students make it necessary to increase the accommodations for the Department. In the addition recommended the necessary room has been outlined. The central wing will afford space for foundry and forge work. It will also permit the placing of the hand forges desired for agricultural students. The upper portion of this wing will give ample storage space. The west wing will accommodate the machine shops, the small experimental power plant needed if the present power plant is removed, and other laboratories needed by the Civil Engineering Department.

The increase in number of students, the two-year course in Mechanic Arts, the introduction of the new courses, and the effective teaching of the present courses necessitate the employment of additional instructors. It is recommended that there be employed an additional instructor capable of handling classes in theory, and a mechanic who can assist in the shop work, make and care for apparatus, make necessary repairs, etc.

Much of the equipment required has been asked for many times, but has not been purchased because of lack of funds. Each year it has grown more expensive, as the prices will show, but it is still needed for the proper development of the courses. The automobiles requested are to carry out the course outlined for the preparation of teachers in allied subjects, under the Smith-Hughes Act, and should be purchased, if possible, from that fund.

Department of Mathematics

The work outlined for this Department is carried on by the Assistant Professor, with the assistance of the Professor of Mathematics and Civil Engineering and instructors from the Engineering Department. The mathematics taught the students in Liberal Arts is given by the instructor in Spanish, as no one in the Engineering School can find time to teach them. Such conditions should not exist; therefore, it is recommended that an additional instructor in Mathematics be appointed, for whose remuneration allowance has been made in the salary budget.

An appropriation of \$400 is asked to cover the purchase of models and reference books.

Department of Physics

This Department is at present combined with the Department of Electrical Engineering. They should be separated as soon as possible. An appropriation of \$2,000 should be made for the purchase of apparatus and supplies, and it is so recommended.

Department of Military Instruction

This Department was removed from the Division of Engineering in the reorganization of the College last spring. During the session of 1917-1918 the Dean was very closely associated with the work of the Department, and in the summer of 1918 accompanied some of the students to the Training Camp, at Plattsburg, where he enlisted as a private for two months in order to become intimately acquainted with modern military practice. The students upheld the best traditions of the College and were more than ordinarily successful. The Dean received a recommendation—"Specially qualified for an instructor," etc. The establishment of the Students' Army Training Corps removed any necessity for his service in a military capacity.

The School of Chemistry

H. B. McDONNELL, *Dean*

Previous to the recent reorganization of the College into Schools the work in chemistry was included in the Division of General Science, and included the work of instruction in bacteriology and geology in addition to chemistry and the inspection of fertilizers, feeds and lime. The rapid expansion of the work has resulted in the narrowing in the number of subjects, but in rendering the work in chemistry more comprehensive. It is now organized as follows:

(1.) Department of General Chemistry

This Department is under the immediate supervision of Professor Broughton. The course in General Chemistry is intended to give a broad and general knowledge of the science well adapted as a basis for later specialization of graduate work.

(2.) Department of Biological Chemistry

This Department is under the immediate supervision of Doctor Gordon. Physical Chemistry and the chemistry of colloids will be emphasized, with their application to the chemical process involved in the growth of plants and animals. The course gives excellent preparation for the study of medicine.

(3.) Department of Industrial Chemistry

This Department is under the general direction of the Dean and is subdivided into sub-groups, with courses of study in—

(a) *Agricultural Chemistry*, under the immediate charge of Professor Wiley, and specializing in the study and analysis of feeds, foods and agricultural products, as applied in general experiment station practice.

(b) *Chemical Engineering*, under the immediate supervision of the Dean, with the assistance of the School of Engineering. The work is intended to familiarize the student with the large manufacturing operations of industrial chemistry and to fit for positions as directing chemists and superintendents of manufacturing plants.

(4.) Department of Fertilizer and Food Analysis and Inspection

This Department is in immediate charge of the Dean, who is *ex officio* State Chemist, with the assistance of a corps of assistant chemists, inspectors, etc.

This Department includes inspection of—

(a) *Fertilizers*.—This work started under the law of 1886, followed by the Act of 1890, both of which were ineffective for lack of funds. The principal Acts following were those of 1894, 1912 and 1918. There was a fairly steady increase in the use of fertilizers in the State until 1915, when the amount fell off, due to war conditions. The next year, 1916, there was a considerable drop in tonnage, which was more than recovered for 1917, but with a considerable drop again for 1918. Figures are not yet available for 1919, but there will probably not be any increase over 1918. Fertilizer tonnage used in Maryland during recent years, to the nearest thousand, was as follows:

1913	1914	1915	1916	1917	1918
178,000	179,000	170,000	155,000	193,000	175,000

The value of the fertilizer used has increased greatly, due to the greatly increased cost per ton, being now about eight million dollars (\$8,000,000) per year, for fertilizer used in Maryland, with more than twice that much for fertilizer manufactured. Maryland leads in the manufacture of fertilizer, and ships much of it to other States and also to foreign countries.

In the main, we find fertilizers up to the guaranteed analysis. When this is not the case, we have relied mostly on warnings and publicity to remedy the same. The results of inspection are published twice a year. We are now sending out editions of seventeen thousand (17,000) bulletins; the aim being to have the results of one season's work in the hands of the farmers before the next season's fertilizers are purchased.

Fertilizers cannot be made absolutely uniform in composition. In a number of cases farmers have received rebates for shortages; in one case, about \$600.

One inspector is kept constantly at work in Baltimore securing samples, and another inspector covers the remainder of the State, making from one to six visits to each county during the year. The number of samples secured and analyses made have not changed much in two years; the number of samples drawn, about nineteen hundred (1,900); number analyzed, nine hundred and seventy-five (975); number of brands licensed, about one thousand and fifty (1,050). Some of the analyses made were duplications, so that quite a number of registered fertilizers could not be found by the inspectors and, consequently, no samples of these were secured and no analyses made. However, it is not infrequently the case that brands of fertilizers are registered early in the year and not offered for sale.

The new fertilizer law requires separate tonnage reports on each brand, and, while the figures will be interesting, it will require a great deal of extra work to properly tabulate them.

(b) *Feeds*.—The Feeding Stuffs Law was enacted in 1900, and has never been revised. It should be brought up to date by adopting, so

near as our conditions permit, the "Uniform Law," as recommended by the association of Feed Control Officials. Registration is not required for the ordinary feeds, such as bran, middlings and ground pure grains.

Feeds are sampled along with fertilizers, though additional inspections are often necessary during the winter months, when feeds are moving freely but fertilizers are not. About four hundred and fifty (450) samples of feeds have been secured per year and two hundred and fifty (250) analyzed—those omitted being duplicates. The results of analyses are published annually in bulletin form.

(c) *Agricultural Lime*.—The inspection of lime was provided for by an Act of 1912. Samples of all agricultural lime are drawn by the same inspectors who sample fertilizers and feeds. The sampling is, in general, much more troublesome than that of either fertilizers or feeds. The kilns are out in the country, so not so readily accessible, and lump lime is quite variable in the composition of different lumps even from the same pile. The number of samples drawn per year has been from one hundred and forty (140) to two hundred (200), while the number analyzed has been from seventy (70) to ninety (90). In every case at least one analysis of each brand of lime on sale has been made so far as samples could be secured, and practically all have been secured in Maryland. In some cases it is not possible to get samples of lime shipped in from other States. The results are published annually, together with brief explanations and directions for purchase and use.

The three lines of inspection are carried on at the same time by the same inspectors and chemists. Further, the inspection work is in charge of the head of the School (heretofore the Department) of Chemistry. This has effected a great economy in administration as well as in use of laboratories, supplies and assistants, and has enabled the College in years of financial straits to maintain a much better Laboratory and equipment than would have been the case otherwise.

THE LABORATORY BUILDING

The present Laboratory Building was erected in 1897, and did not provide room for much expansion. We have provided more lockers in the students' desks from time to time, till most of them now accommodate four students. The rapid increase in the number of students makes increased facilities imperative. The assembly hall is being used for chemical lectures and a temporary laboratory is being fitted up. The freshman class now numbers one hundred and fifty. For recitations and Laboratory work, classes should be divided into sections of twenty to twenty-five. This requires additional section rooms and additional instructors. Several other classes will have to be divided in the near future. We also need much more room for the inspection work, even if no expansion is attempted. However, more

analyses should be made, especially of leading brands of fertilizers, as one or even two analyses are not enough to properly check them each year.

There are also other lines of inspection that should be added. We should have a law providing for paint and oil inspection.

The need is now urgent for a *New Chemical Building*. Several years ago we considered preliminary plans and estimates for a new Laboratory, and estimated the cost at seventy-five thousand dollars (\$75,000). At the present time, however, such a building would cost double that amount, and the smallest sum that will erect a building that will not be greatly overcrowded within five years is about one hundred and fifty thousand dollars (\$150,000).

The School of Education

HAROLD F. COTTERMAN, *Dean*

The School of Education as now constituted consists of an organization of the various activities of the College which are concerned with the professional preparation of teachers. Its courses are planned to serve three classes of students: (1) those preparing to teach agriculture, home economics, industrial and general subjects in secondary schools; (2) prospective principals of high schools, educational supervisors, county agents, home demonstrators, boys' and girls' club workers, and other extension workers; (3) those majoring in other lines of work who desire courses in education and psychology for their professional and informational value.

Since the Maryland State College has been designated as the institution in Maryland for the training of vocational teachers of agriculture, home economics, and trades and industries as provided for by the Federal Smith-Hughes Vocational Education Law, it has been found advisable to organize the school into four departments, viz: (1) Agricultural Education, (2) Home Economics, (3) Industrial Education, and (4) General Education.

Agricultural Education

The passage of the Federal Vocational Education Law greatly increased the demand for vocational agriculture in the secondary schools of the counties; as a result, the work of this Department has been greatly increased. To date, the Department has been unable to meet the demand for teachers created by this law.

During the fall of 1918-1919 the unusual conditions raised by the war and the inauguration of the Students' Army Training Corps work in the College brought the activities of the Department to a standstill. Following the signing of the armistice, former students began to return, and by the close of the scholastic year, the first of June, 1919, a total of thirteen students were registered for the work of the Department. Three of this number were graduated. At the suggestion of the State Department of Education, a special emergency teacher training course was offered during the summer of 1919 to provide for the shortage of teachers of vocational agriculture in the State. Eleven of the applicants who were recommended by the County Superintendents for this work were admitted to the course and carried it to completion. Practically all of them are now engaged in new departments of vocational agriculture in secondary schools of the State, and will return to the institution in the summer of 1920 for the second

part of their training. The present term finds a total of twenty-two students enrolled for the specialized work of the Department. Several students who made application for work in the Department could not be admitted, as they were unable to meet the farm experience requirement set up under the Federal Vocational Law.

Since the provisions of the Federal Vocational Law make it possible to pay nearly double the salary formerly paid to teachers of agriculture, and in view of the fact that many of the counties so far have been unable to realize on this fund because qualified teachers were not available and as the fund available to the State from the Federal Government increases each year, it can be safely predicted that the demand for agricultural teachers will increase. The work of this Department, therefore, can be expected to grow heavier.

Call on the Department for extension work in its line has been considerable. During the year 1918-1919 the Professor of Agricultural Education acted as State Supervisor of Vocational Agriculture for the State Department of Education, and devoted approximately one-half of his time to that work. This did not interfere with the work of the Department at that time, as its normal load was reduced by war conditions. Considerable call has been made to the Department for the training of teachers in service. Several communities were helped in this way last year. As training in service is a part of the program for the emergency teachers, and since the demand for residence instruction at the College is now greatly increased, the limited facilities of the Department will not permit it to undertake the amount of this instruction that should be conducted in the State. During the present year the Professor of Agricultural Education holds himself in readiness to assist the State Department of Education in supervising the vocational departments of agriculture that have been set up in the State under the provisions of the Smith-Hughes Law. But since the State Department has employed a Supervisor of Vocational Education, it is not expected that this work will take much of the time of the Professor of Agricultural Education.

During the past year the Department has been equipped with a laboratory, and is now prepared to handle the classroom instruction in teacher training in the most approved way. The greatest problem confronting the Department is the matter of providing facilities for practice teaching in departments of secondary vocational agriculture as required to meet the provisions of the Federal and State laws. As the Maryland State College has no high school in which to teach secondary vocational agriculture, and since there are no high schools in the immediate vicinity of the College that can be utilized for practice teaching, it is practically impossible with the present facilities to provide practice teaching for seniors.

Practice teaching may be handled in two ways; one method is to provide the Department with facilities for transporting senior students to high schools within reasonable distance of the College, where such a student acts as an assistant to the teacher of vocational agriculture

in quarter and half day periods and at the same time carries his regular work in the College. The other method is to require a student to spend one term of twelve weeks as an assistant to a teacher of vocational agriculture in some high school of the State. This is a very efficient method of securing practice teaching, but it works considerable hardship on the student, as it requires him to spend an extra term in order to complete his course. He would thereby be at an extra term's expense. This is unfair to the student, and would tend to discourage the work which both the Federal and State laws foster. If some arrangement could be devised which would compensate the student for the service he renders to the State, at least to the amount of his actual living expenses, it is felt that students would have no objection to putting in this extra term as practice teachers.

Either of the plans outlined for securing opportunities for practice teaching could be established at much less expense to the State than by providing a high school on the campus of the institution for that purpose, as is done in many other States. In either case, the location of the College makes it necessary that transportation be provided for those taking the work.

DEPARTMENT OF HOME ECONOMICS EDUCATION

MISS EDNA B. McNAUGHTON, *In Charge*

As a result of the Federal Vocational Law, the Department of Home Economics Education was organized in the fall of 1918. A total of five students registered for the work of the Department. During the Summer School the Department offered work to home economics teachers who desired to prepare for the teaching of vocational home economics as provided for under the Federal law. A total of seven students were accepted for this work. All of these carried the work to completion, and six are now engaged in teaching home economics in the public schools. The present term finds a total of nine students registered for the specialized work of the Department.

During the year 1918-1919 the Professor of Home Economics Education acted as State Supervisor of Home Economics for the State Department of Education, and devoted approximately one-half of her time to that work. Since the State Department has employed a Supervisor of Vocational Education, the call on the Professor of Home Economics Education for the supervision of home economics in the secondary schools of the State is not expected to be heavy. It is expected, however, that it will be necessary for her to devote considerable time to assisting teachers in the communities in which home economics is now being taught as provided for under the Federal Vocational Law.

As the Department is practically unequipped, it is greatly in need of funds to equip a demonstration teacher-training laboratory, and to provide facilities for practice teaching. However, since home eco-

nomics is taught in several high schools in the vicinity of the College, it is not expected that the Department will experience much difficulty in finding opportunity for practice teaching, but, as in the case of Agricultural Education, the location of the institution makes it necessary that transportation be provided for those taking the work.

DEPARTMENT OF INDUSTRIAL EDUCATION

M. M. PROFFITT, *In Charge*

As the result of the Federal Vocational Education Law, the Department of Industrial Education was organized in the fall of 1918. The war conditions and the inauguration of the Students' Army Training Corps at the institution made it very difficult for the work to be done. But as this work was new in the State and ground needed to be broken, during the year 1918-1919 the Professor of Industrial Education devoted his time to making a survey of the industrial field in connection with the State Department of Education. He also acted as State Supervisor of Industrial Education for the State Department, and devoted approximately one-half of his time to that work. Since the State Department of Education appointed a full-time Supervisor of Vocational Education, the Professor of Industrial Education will now be able to devote his entire time to teacher training.

With the establishment of evening trade classes in Baltimore, work in industrial teacher training was begun. The present term finds twenty trade teachers enrolled for evening teacher-training classes in that city. To provide for these evening classes it has been found necessary to maintain a classroom there.

In the training of trade teachers no problem of practical teaching arises; but should a class of related industrial teachers be enrolled at the College, practice-teaching problems will present themselves. It is thought that this practice teaching may be provided for in connection with the two-year engineering courses. Should this be the case, and should the demand for the training of trade teachers increase, as is expected at the present time, an assistant may be necessary in this Department.

General Education

The establishment of a Department of General Education became necessary in order to provide the general courses in education fundamental to the work of the other special departments of education. At the present time the work of this Department is handled by the Professors of Agricultural Education, Home Economics Education, and Industrial Education. As the work of these instructors develops in their special fields, it will be impossible for them to give their time to the work grouped under this heading. To provide for this work and to meet the call for graduate work in education, funds for a Professor of Psychology and School Administration should be provided.

The Summer School

The courses given in the Summer School are under the direction of the Dean of the School of Education and are planned to serve three classes of students: (1) students desiring courses in elementary, secondary and vocational education; (2) special students who find that they can come to College conveniently during the summer, as farmers, breeders, dairymen, homemakers, chemists, and others desiring special work; (3) regular students who are candidates for degrees in Agriculture, Chemistry, Engineering, Home Economics, and Liberal Arts.

As the College was being utilized by the Federal Government to train radio officers during the summer of 1918, it was impossible to hold the regular summer session. However, in order that the institution might offer its facilities for the training of vocational teachers, as such teachers were greatly needed at the time in the State, summer courses in vocational education were offered in cooperation with the Johns Hopkins University.

In the summer of 1919, a total of two hundred and one students were enrolled. This number included students from twenty-one of the twenty-three counties of the State. One hundred and fifty-seven of the number enrolled were teachers in the public schools. The remaining forty-four were special students and students taking regular college credit courses. The teachers enrolled showed considerable disposition to elect as much college work as could be consistently articulated with their immediate professional needs, and several made definite arrangements to return to the College to complete the work necessary for a degree. This tendency on the part of the teachers is highly gratifying, as it shows a desire on their part to broaden their training, and thus increase their usefulness and service in their local communities.

In order that the methods courses might be thoroughly practical, an observation school was inaugurated as an integral part of the Summer School of 1919. While this makes it possible to carry on the work of the Summer School in the most approved way, it calls for additional instructional force.

Quite a number of the teachers return to the institution each summer with the idea of carrying on a definite line of study, to be articulated with the professional requirements demanded of them from time to time by the school system in which they work. The students of the Summer School, then, naturally fall into two groups: former students and those entering for the first time. This necessitates additional sec-

tions and sequel courses, in order that there may be opportunities to follow a definite line of study over a period of years. This naturally appeals to the teachers and others desiring summer work, and makes for efficient service on the part of the institution, but it calls for additional instructors. However, if the Summer School is to make the growth that should be expected of the summer session of an institution of the type of Maryland State, funds for such instructors must be provided.

As many of the persons enrolled for academic courses in the summer session desire to teach in the secondary schools of the State the subjects they pursue, there has been a considerable call for work in secondary education. The institution has been unable to meet this demand, because the professors of agricultural education, home economics, education, and industrial education are fully engaged during the summer session in their respective specialties and are, therefore, unable to offer any of the general courses in education that they give during the regular session of the College. Partly to meet this demand, and partly to meet the demand of persons taking special methods in vocational education, funds should be available to secure additional instructions in secondary education.

Many of the members of the regular College Faculty are engaged in research in their special fields during the summer, and it has been found very difficult to set them free for the work of the Summer School. Quite frequently it has been necessary either to obtain an additional instructor for their work or to omit it from the program of studies. In order that the work of the Summer School go on without interruption and at the same time without interrupting the regular summer work of the College departments, and for the reasons mentioned above, it is highly advisable that the institution be provided with a special fund for the salaries of Summer School instructors.

The lack of sufficient housing facilities which is felt during the regular session of the institution also exists during the Summer School. The congestion in and around Washington makes it almost impossible to house students in private homes in the vicinity of the College. However, in several cases room and board have been secured at satisfactory rates.

The School of Home Economics

MISS MARIE MOUNT AND MISS FRIEDA WIEGAND, *In Charge*

The Division of Home Economics was established October 1, 1918, and was reorganized into the School of Home Economics in 1919 with the following departments:

(1.) Textiles and Clothing

This Department was organized and equipped to enroll a limited number of students by November, 1918. Students were enrolled in two courses: Textiles and Garment Construction. During the Summer School session of 1919 an additional course was offered in Arts and Handicraft especially designed to inspire and to help public school teachers interested in that phase of work.

The following courses are being offered:

- Garment Construction.
- Drafting and Elementary Dress Design.
- Elementary and Advanced Dressmaking.
- Textiles.
- Composition and Design.
- Freehand Perspective.
- Costume Design.

It is the aim of this Department to increase the number of courses as the demand increases, and to work out practical problems in the various branches of the Department so that graduates may be more practical and efficient homemakers or be qualified to accept positions in the business world as costume designers, interior decorators, or textile examiners.

(2.) Foods and Cookery

No students were enrolled in Foods and Cookery during the regular school year of 1918-1919. For the 1919 Summer School session the laboratory was partly equipped and a course in Foods and Cookery offered with eight (8) students enrolled.

The courses in this Department are designed to give instruction in the preparation and service of meals for a family or a larger group, and in the selection and buying, as well as the dietetic value of foods.

The plans for 1919-1920 include the completion of the equipping of the foods laboratory, and the furnishing and equipping of a model dining-room in connection with the laboratory to be used by the students for the serving of meals as a part of their laboratory work.

(3.) Hygiene and Health

The courses offered under this Department are planned to give instruction along the lines that directly affect the health and general well-being of the individual, the family, and the community.

(4.) Institutional and Home Management

The purpose of this Department is two-fold: first, the management of the College dining hall, the laundry, and other parts of the institution that could be placed to advantage under a domestic department; second, the training of home economics students as directors of cafeterias, lunch rooms, institutional dining-rooms, etc. To meet the increasing demand for trained women in these lines it is necessary for the School of Home Economics to maintain such a department.

The reorganization of the Department is being planned with these aims in view: To feed the students and other people of the College that they be both well nourished and pleased, and to maintain a model place in which the students specializing in institutional management may receive their practical training.

For either of these purposes the present Department is inadequate as to building, furniture, and equipment.

In the fall of 1918 the College partly equipped and furnished a house in which the home economics students will spend from six (6) to ten (10) weeks keeping house during their senior year. This house is at present used as a dormitory for home economics students. It is hoped that within the next two years the house will be completely equipped and furnished.

The School of Liberal Arts

THOMAS H. SPENCE, *Dean*

A survey of the curricula of studies in the Maryland State College, from the opening of its doors to the public in 1859 down to the present, reveals the importance that has always been attached to the Liberal Arts as either the basal or the principal parts of collegiate instruction. For many years the academic branches of learning received all but exclusive attention, and during the past two decades during which the institution has forged ahead in the various technical fields there has never been a time when the content of all curricula, even though highly specialized, did not contain a significant proportion of academic studies. This accentuation discloses an unmistakable instinct on the part of Maryland people for that which both trains and humanizes. This insistence has also made it necessary for the College to maintain, from the first, an instructional unit in the Liberal Arts that has had an organization and a function not unlike that of the standard arts institutions of the United States. During the past year, prior to the reorganization of the College on a university basis, an investigation was carried on to ascertain how fully the scope of arts instruction, as then given, paralleled that of representative arts colleges in both Maryland and the United States. The finding was more than satisfactory, for in some instances the then provided facilities for Liberal Arts instruction even surpassed those of arts colleges of widely recognized merit. As a result, it became a relatively easy problem of administration to organize out of the already existing subject-matter groups an academic division which could function as both an auxiliary and an independent unit. Such organization was effected during the second term of 1918-1919, and now bears the name of the School of Liberal Arts.

Purpose

This School has as its prime object the offering of foundational and specialized instruction in languages and literature, and in social science. It aims to provide a stock upon which to graft technical and scientific education; to prepare the foundation for business, law, journalism, administration, philanthropic work, the more responsible civil service positions, and the higher teaching positions; and to afford the opportunity for general cultivation and refinement of the mind.

Departments

For administrative purposes this School includes the following departments:

Department of Ancient Languages and Philosophy, which offers only general courses.

Department of Economics, which offers basal economics courses, with special stress on modern business principles and practice.

Department of the English Language and Literature, which offers practical, foundational and critical courses in the writing of English, and analytical and interpretative courses in the leading types of literature.

Department of History and Political Science, which offers courses in European, American, State and industrial history, in European, United States, State and municipal government, and in international law.

Department of Journalism, which offers courses in general and specialized journalistic practice, and outlines a professional curriculum that may be completed in four years.

Department of Modern Languages, which offers general courses in the translation, writing and speaking of French, German and Spanish. The courses in Spanish have a two-fold aim: the commercial needs of the United States in its relation, particularly, with the South American republics; and the special interests of scholars and diplomats.

Department of Public Speaking, which offers general courses in reading, speaking and debate, and provides special forensic instruction for all students whose occupations or professions require regular speaking from the platform.

Department of Library Science, which offers courses in general library practice.

Department of Music, which offers individual and class instruction on brass, reed and string instruments.

These departments, however, do not represent the scope of Liberal Arts instruction provided by the College. Additional courses in bacteriology, botany, chemistry, drawing, entomology, geology, mathematics, pedagogy, physics, psychology, and zoology are offered in the schools where such subjects have a basic application. Between the School of Liberal Arts and the other schools there exists a close co-operation.

NEEDS AND RECOMMENDATIONS

Faculty and Departments

Owing to the cooperative relations between the various schools of the College, to the relatively large number of students (from the other schools) who come to the arts school for auxiliary instruction, and to the necessity of providing adequate advanced study for those who major in the Liberal Arts, the Faculty of this School is decidedly too small. It is seldom advisable to have any member of the Faculty teach more than twelve to fifteen hours a week—that is, if he is to maintain the scholastic and pedagogic standards that a State institution has a right to expect of him. Furthermore, certain members have executive or extension duties, which materially increase their burden.

Besides additional instructors, there should be certain reorganizations, recombinations and redistributions, in order to enable the present teaching corps to function to the best advantage and to provide amply for the legitimate demands of the School's patrons.

The Department of Ancient Languages and Philosophy should be reorganized. In the first place, the combination of Ancient Languages and Philosophy is not the most logical, was in the beginning tentative, and tends to impose too heavy a burden on the occupant of the chair. Since the opportunities for the study of the classics should be sufficiently great to meet present-day demands for these subjects, it seems best to divorce the classical languages from Philosophy and to establish a Department of Ancient Languages, which should receive the exclusive attention of one professor whose training and tastes best fit him for this work.

In consequence of splitting the Department of Ancient Languages and Philosophy, and in response to an insistent demand that the subject of Sociology be given much fuller consideration, it would probably be wise to combine the Philosophy with Sociology, a natural grouping, and thereby to establish the Department of Philosophy and Sociology. The man invited to fill this chair should bring not less than eight to ten years' experience in these subjects.

The Department of Economics is proving to be one of the most significant of the School. It is already planning to enlarge its offerings so that the needs of the commercial field will be supplied. In this connection, it would seem advisable to change the name of the Department from its present designation to the Department of Economics and Commerce. Because of the increasing demand for general and specialized work in these fields, this Department should be provided with an instructor or assistant professor, in addition to the able Department head recently appointed.

The Department of the English Language and Literature offers instruction, at some time or other during the course, to every regularly registered student of the College. This means that the work of the Department, numerically, is necessarily heavy. Again, because of the growing realization among people in general of the value of a certain familiarity with the use of their own language as a communicative instrument, and of the importance of knowing something of the literature of their own tongue, the courses in both language and literature must of necessity be somewhat extensive. To furnish the various courses in English that the welfare of the College requires will demand the services, in addition to the Department head, of at least one instructor or assistant professor, together with the whole or part time services of a theme-reader.

The Department of History and Political Science is already doing commendable work, but is seriously hindered on account of its being undermanned. At the present no department perhaps has a more responsible part to play in the State's and Nation's affairs.

The Department of Journalism, so long as it remains a division of the arts school, needs as soon as possible an assistant professor. This Department has a fruitful field to develop, and deserves every encouragement it is possible to give it.

The Department of Modern Languages should be divided and reorganized. Since Spanish, because of our proximity to and trade with Spanish-speaking countries, is demanding both practical and literary consideration from a rapidly increasing number of students, it would seem advisable to establish a separate Department of Spanish, and to place this exclusively in charge of an experienced man who has spent long periods of time among Spanish-speaking nations and understands both their languages and their characteristics as national neighbors with whom the United States wishes to live profitably and peacefully. These qualifications the present assistant professor of modern languages possesses.

The two remaining languages of the modern language group are French and German. These are often grouped together in strong institutions, and it would appear to be the best arrangement here, for the next few years, to combine them. For the proposed Department of French and German an experienced man may be easily secured. He should be particularly qualified in French, and should be a man who can maintain the very highest collegiate standards in the two languages aforesaid. This must necessarily be, because of our securing the graduates from the best high schools of the United States, who rightly resent collegiate instruction in the modern languages that is of the same grade and character as that previously done in high schools.

The Department of Public Speaking should be allowed such freedom of time as to make its presence felt individually throughout the various divisions of the College.

The Department of Library Science will continue on a satisfactory basis, provided the Librarian is given sufficient assistance.

The Department of Music seems to have a prosperous future awaiting it. It should be headed by a professional musician of undoubted attainments, who will study the numerous ways in which the interests of the College and student body may be advanced by this fine art, and who will bend every effort to bring about a realization of his vision. There should be provided, also, adequate facilities for individual courses and class curricula.

Another department the establishment of which should receive attention at an early date is that of Fine Arts. With the constantly growing female portion of our student body, interest in the fine arts is fast developing. One instructor could adequately take charge of this department.

The Library

MISS MILTANNA ROWE, *Librarian*

This report covers our leading Library activities and statistics from October 1, 1918, to October 1, 1919.

Miss Conner, Head Librarian, resigned October, 1918, her resignation taking effect November 1, 1918. As we were at that time an S. A. T. C. unit, the usual Library reference work was diminished, so that Miss White, Assistant Librarian, acted as Librarian until the new head took the position, November 15, 1918. The present staff consists of the Librarian, one assistant, and one student assistant. Our open hours are from 8 A. M. to 5.30 P. M., with the Librarian and assistant in charge on all days except Sunday. The student assistant is in charge on Sunday from 2.30 to 5.30, and from 7 to 10 P. M., and on all evenings, except Saturday, from 7 to 10.

Miss Conner had collected and prepared for the American Library Association War Service sixty-five volumes of fiction. One of the first things that we did was to send these to our headquarters for this work, Peabody Institute, Baltimore.

Our two main objectives of this year have been the renovating and refurnishing of our building and the recataloging of our Library. The first named has, with the extraordinary assistance of the College, considering the small funds of the present, been quite thoroughly carried through and will receive further attention this year.

As portions of the Library have not been catalogued and, on the other hand, we have numerous records of books that cannot be located, the proposition of cataloguing our entire collection moves slowly. We are now confident that the size of this Library, as stated in the College catalogue for 1919-1920, was underestimated (5,000 bound volumes and 5,000 United States Government documents, and unbound reports and pamphlets). As we lacked records, we were forced to make a general estimate, which will be corrected as we continue to catalogue and inventory the Library. By introducing Library of Congress catalogue cards we have simplified the cataloguing, but even with this help only 1,200 books have been done between December 1, 1918, and September 1, 1919. These represent much labor, but only a small percentage of the complete plan. This lengthy statement of our need of a good catalogue is preliminary to the first recommendation made at the close of this report.

Out of our \$1,000 annual Library appropriation we invested \$400 in much-needed furniture; \$350 has been put in books, of which the most useful item is a 1914-1916 edition of the New International Cyclopaedia.

The School of Education was permitted to place in the Library \$106 worth of books much needed by our Summer School students. This action, instigated by Dean Cotterman, was of inestimable assistance to us, owing to the great amount of reference work done by the Summer School.

Through the bindery we have added 94 volumes, 43 of which (Agricultural periodicals) were paid for by the Experiment Station. A 98-volume bindery order of the Station was catalogued and placed in the departmental library of the Entomological Department.

We wish to acknowledge 63 gift books, largely fiction, from a few members of the Faculty.

The circulation of Library material during the past year was as follows: Books, 1,214; magazines, 281; bulletins, 23; "overnight" reference books, 137.

We have not encouraged the circulation of bulletins, as they are many times impossible to replace if lost, nor have we kept a record of the many bulletins used in the Library.

The Library Extension Loan System was inaugurated in June, 1919. Thus far we have circulated forty-seven books in the State.* As our funds allow the purchase of volumes called for, we feel sure that this branch of extension work can be made helpful to the users of the books, as well as an excellent means of better acquainting Maryland people with the spirit of our College.

Library Science has been made a part of the curriculum of our School of Liberal Arts. The Librarian meets this class of thirty-five once a week for instruction in the use of the Library.

The libraries of Washington are available for many of the rarest and most expensive works, but there is need for many more reference books for the constant use of our increasing student body and for the Experiment Station. The present building is too small and additional space is now urgently needed.

The Graduate School

CHARLES O. APPLEMAN, *Dean*

Graduate work is offered to graduates of this or other standard colleges who, in the judgment of the Dean of the Graduate School, are qualified to undertake that work. Each individual case must be determined upon its merits.

The graduate work is offered, under the supervision of the Dean of the Graduate School, by competent members of the various faculties of instruction and research. These constitute the Faculty of the Graduate School.

Work in accredited research laboratories of the United States Department of Agriculture and other local national research agencies under competent supervision is accepted, when previously arranged, as work in residence for part of the requirement. These laboratories are located in easy daily reach of the College.

Advanced Degrees

The advanced degrees conferred are Master of Science and Doctor of Philosophy for work in Agriculture and the Natural Sciences; Master of Arts for work in Liberal Arts, Education and Home Economics, and Doctor of Philosophy in Liberal Arts.

Enrollment of Graduate Students for 1919-1920

Dairy Husbandry and Physiological Chemistry.....	1
Entomology and Plant Pathology.....	1
Plant Pathology, Plant Physiology and Horticulture.....	1
Plant Physiology and Soils.....	1
Plant Physiology and Physiological Chemistry.....	1
Plant Biochemistry and Physiology.....	1
Plant Physiology, Genetics and Soils.....	1
Total.....	7

The Office of the Recorder

W. M. HILLEGEIST, *Recorder*

The following statistics show the registration of students during the regular school years, 1917-1918, 1918-1919, 1919-1920, and the Summer School sessions of 1917 and 1919.

These figures refer to the number of students attending the College since the last biennial report was published, and are significant in themselves.

Students in Classes

1917-1918

Seniors	18
Juniors	35
Sophomores	36
Freshmen	54
Two-year Agriculture	23
Sub-collegiate	14
Unclassified	16
Graduate	10
	<hr/>
	206

Ten Weeks' Course	138
Summer School	142

1918-1919

Seniors	21
Juniors	25
Sophomores	39
Freshmen	97
Two-year Agriculture	26
Two-year Mechanic Arts	7
Unclassified	27
Graduate	4
	<hr/>
	246

Ten Weeks' Course	(not conducted)
Summer School	(not conducted)

1919-1920—(AS OF OCTOBER 15, 1919)

Seniors	36
Juniors	39
Sophomores	81
Freshmen	146
Two-year Agriculture	37
Two-year Mechanic Arts	11
Unclassified	24
Graduate	7
Detailed by Federal Board for Vocational Training	32
Industrial Teacher Training Courses (Baltimore) ..	20
	<hr/>
	433

Ten Weeks' Course	(not to be conducted)
Summer School (1919)	201

1919-1920—(AS OF OCTOBER 15, 1919)

	<i>New Students.</i>	<i>Re-entered.</i>
Seniors	0	36
Juniors	1	38
Sophomores	4	77
Freshmen	129	17
Two-year Agriculture	21	16
Two-year Mechanic Arts	6	5
Unclassified	12	12
Graduate	7	0
Detailed by Federal Board for Vocational Training	32	0
Industrial Teacher Training Courses	20	0
	<hr/>	<hr/>
	(New) 232	(Old) 201
Total	433 students	

Of 146 freshmen, 17 are students who re-entered College and 129 are new students. The 129 students came from 61 schools, as follows:

Baden High School, Baden, Md.....	1
Baltimore City College.....	3
Baltimore Polytechnic Institute.....	4
Barton High School, Barton, Md.....	1
Bridgeport High School, Bridgeport, Conn.....	1
Brunswick High School, Brunswick, Md.....	1
Business High School, Washington, D. C.....	2
Calvert High School, North East, Md.....	1
Cecil County High School, Elkton, Md.....	1
Central High School, Washington, D. C.....	11

Centreville High School, Centreville, Md.....	1
Charlotte Hall School, Charlotte Hall, Md.....	1
Chestertown High School, Chestertown, Md.....	2
Clarksville High School, Clarksville, Md.....	1
Cooperative Educational Institute, New York, N. Y.....	1
Delmar High School, Delmar, Md.....	4
Dickinson High School, Dickinson, N. J.....	1
Eastern High School, Washington, D. C.....	1
Emerson Institute, Washington, D. C.....	2
Fishburn Military Academy, Waynesboro, Va.....	1
Frederick High School, Frederick, Md.....	8
Friends School, Baltimore, Md.....	1
Gallatin High School, Gallatin, Mo.....	1
Gonzaga College, Washington, D. C.....	1
Greensboro High School, Greensboro, Md.....	2
Harrisburg Academy, Harrisburg, Pa.....	3
Havre de Grace High School, Havre de Grace, Md.....	2
Homestead High School, Homestead, Pa.....	1
Huntingdon High School, Huntingdon, Pa.....	1
Hyattsville High School, Hyattsville, Md.....	3
Jarrettsville High School, Jarrettsville, Md.....	1
Laurel High School, Laurel, Md.....	4
Loyola Preparatory School, Baltimore, Md.....	1
McDonogh Institute, La Plata, Md.....	2
McKinley Manual Training School, Washington, D. C.....	10
Marlboro High School, Upper Marlboro, Md.....	1
Middletown High School, Middletown, Md.....	3
Mt. Airy High School, Mt. Airy, Md.....	3
Oberlin High School, Oberlin, Ohio.....	1
Preston High School, Preston, Md.....	1
Randolph-Macon Academy, Bedford City, Va.....	1
Ridgewood High School, Ridgewood, N. J.....	2
Rock Hill College, Ellicott City, Md.....	2
Royersford High School, Royersford, Pa.....	1
St. John's College Preparatory School, Annapolis, Md.....	2
Shelton High School, Shelton, Conn.....	1
Sherwood High School, Sandy Spring, Md.....	1
Smithburg High School, Smithburg, Md.....	1
Snow Hill High School, Snow Hill, Md.....	1
Sparks High School, Sparks, Md.....	2
Stockton High School, Stockton, Md.....	2
Towson High School, Towson, Md.....	3
Union City High School, Union City, Pa.....	1
Union School, Union, Miss.....	1
Washington Collegiate School, Washington, D. C.....	1
Washington County High School, Hagerstown, Md.....	5
Washington High School, Princess Anne, Md.....	5

Washington Irving High School, Clarksburg, W. Va.....	1
Western High School, Washington, D. C.....	3
Western Maryland Preparatory School, Westminster, Md.....	1
Wicomico High School, Salisbury, Md.....	1

Total new freshmen..... 129

Regular Students Listed by Counties, States and Countries

	1917-1918	1918-1919	1919-1920
	(As of Oct. 15, 1919)		
Allegany	2	6	10
Anne Arundel	6	4	7
Baltimore	9	11	24
Calvert	2	3	3
Caroline	2	3	5
Carroll	2	1	5
Cecil	0	1	4
Charles	5	4	7
Dorchester	5	4	3
Frederick	7	12	27
Garrett	0	3	2
Harford	5	4	12
Howard	2	1	2
Kent	1	0	3
Montgomery	7	8	15
Prince George's	35	26	57
Queen Anne's	5	4	6
St. Mary's	0	1	0
Somerset	11	6	17
Talbot	1	2	2
Washington	9	18	23
Wicomico	1	0	3
Worcester	2	5	8
District of Columbia	37	64	78
Baltimore City	16	18	51
<i>States.</i>			
Connecticut	0	1	0
Delaware	1	1	4
Florida	0	1	1
Georgia	1	0	0
Illinois	1	1	0
Kansas	1	0	0
Maine	0	0	1
Massachusetts	1	1	1
Mississippi	1	1	2
Missouri	0	0	1
New Jersey	3	3	7

	1917-1918	1918-1919	1919-1920 (As of Oct. 15, 1919)
New York	7	4	8
Ohio	0	0	1
Pennsylvania	7	3	10
Texas	0	0	1
Utah	0	1	0
Virginia	5	12	15
West Virginia	4	3	3
Washington	0	1	0
Wyoming	0	0	1
<i>Countries.</i>			
China	1	0	1
Japan	1	0	1
Philippine Islands	0	1	0
South America	0	3	1
	<hr/> 206	<hr/> 246	<hr/> 433

Summer School Statistics
Listed by Counties and States

	1917	1918 (not conducted)	1919
Allegany	3	.....	7
Anne Arundel	14	.....	3
Baltimore	1	.....	9
Calvert	0	.....	1
Caroline	1	.....	7
Carroll	3	.....	11
Cecil	0	.....	0
Charles	18	.....	15
Dorchester	10	.....	4
Frederick	15	.....	23
Garrett	0	.....	2
Harford	1	.....	2
Howard	0	.....	4
Kent	1	.....	7
Montgomery	11	.....	12
Prince George's	29	.....	42
Queen Anne's	0	.....	2
St. Mary's	14	.....	11
Somerset	0	.....	2
Talbot	0	.....	0
Washington	2	.....	6
Wicomico	0	.....	1
Worcester	0	.....	3

	1917	1918 (not conducted)	1919
District of Columbia	14	.....	13
Baltimore City	3	.....	8
Missouri	1	.....	0
Tennessee	1	.....	0
Arkansas	0	.....	1
Pennsylvania			1
Mississippi	0	.....	1
Virginia	0	.....	2
West Virginia	0	.....	1
Totals	142	.....	201

It will be noticed that the short course in agricultural practice, or three months' winter course for 1917-18, 1918-19 and 1919-20, and the Summer School session of 1918 were not conducted. The principal reasons for temporarily discontinuing the short course in agricultural practice are the absolute lack of living quarters to accommodate the applicants and the inability of the members of the teaching staff to handle this special work in conjunction with the regular class work. Situated within eight miles of Washington, this community was compelled to absorb part of the human overflow of that city.

On December 17, 1917, the Signal Corps of the United States War Department established a Radio School at this institution. This School continued its work until October 1, 1918. During this period of nine and one-half months there were trained and turned out more than twelve hundred (1,200) officers. This organization supplied all of its equipment and largely manned its own classes. The College boarded and lodged the members of the School in addition to taking care of the regular students. This is another reason why the short course in agricultural practice in 1917-18 was not held, and was also the cause for not conducting the Summer School in 1918.

Immediately upon the disbandment of the Radio School the War Department, through its Committee on Education and Special Training, established two units of the Students' Army Training Corps—collegiate, and radio or non-collegiate. Two hundred and seventy-four (274) men were enrolled in the collegiate section, and two hundred and nine (209) in the radio section, making a total enrollment of four hundred and eighty-three (483) members.

The Students' Army Training Corps was demobilized on December 21, 1918. In addition to the four hundred and eighty-three (483) members of the S. A. T. C., there were thirty (30) regularly enrolled students. This group was made up of young women, and those young men who were not of legal age to join the S. A. T. C.

At the beginning of the second term of 1918-19 matters in general began to assume a normal aspect, and at this time very little effect of the war-time conditions can be noticed.

One hundred and forty-six (146) students are enrolled in the freshman class for 1919-20. Except in the cases of five (5) men who have been in the army and there learned the need of a higher education (these are not men detailed here by the Federal Board for Vocational Education), every new member of the freshman class has presented sufficient entrance credits from approved high and preparatory schools to at least meet the requirements for qualified admission. Fifteen (15) units are required for full entrance and fourteen (14) units for qualified entrance. Ninety-three (93) members received credit for fifteen (15) units, and thirty-one (31) for fourteen (14) units. Seventeen (17) men re-entered College with freshman rank.

The College offered to accept and train a limited number of men in accordance with the conditions set forth in the Federal Smith-Sears Law. Under this legislation the Federal Government provides for the re-education of those soldiers and sailors who, having been incapacitated while in the service, have been discharged with a disability of 10 per cent. or more. The funds for this work are administered through the Vocational Rehabilitation Section of the Federal Board for Vocational Education. Thirty-two (32) men have already been detailed here. These students are listed in a group in the statistics. Sixteen (16) are pursuing courses in agriculture; nine (9), general courses; one (1), economic zoology; two (2), agricultural education; one (1), landscape gardening; two (2), highway engineering; one (1), chemistry. All of these men show an active interest in their work.

The Smith-Hughes Congressional Act provides for the organization of industrial teacher-training courses. These courses are conducted under the supervision of the School of Education, Maryland State College. At present the classes meet in McCoy Hall, Baltimore, three evenings each week. There is an enrollment of twenty.

THE GENERAL SERVICE DEPARTMENT

H. L. CRISP, *Superintendent*

Organization

Since the last biennial report a General Service Department has been organized, starting in 1917 with two rooms and about one dozen employees and at the present time having from fifty to sixty members, nine of whom are students on scholarships.

The Department is housed in the basement of the Agricultural Building, having its carpenter and mechanic shop, postoffice, business office, stock room, freight room and auto repair room near by.

Service

Under the General Service Department is all work connected with the incoming and outgoing mail and its distribution to the various

departments; the handling of all freight and express shipments; the upkeep and repair work on all buildings, the drainage system, heating plant, lighting system, drinking water supply systems, telephone service, plumbing, etc.; purchasing for and directing all new construction work, and all truck service, both local and inter-city. All janitor service is also organized and supervised by the Department. The purchase and handling of the coal for the institution is its duty. The furnishing of the dormitories, auditoriums and classrooms and the care of them, together with key service for all, are other of its duties.

The appropriation for repair work during the past two years was so small that only minor repairs have been made to the several buildings on the campus, and all the buildings are now in need of a thorough overhauling and renovating.

We also need a mechanical engineer as assistant superintendent to lighten the multitudinous duties of the Superintendent along these lines. We need more skilled labor, better salaries for our employees, up-to-date shop equipment, and funds to purchase more stock supplies in order to have them on hand for use when needed for quick service.

A large garage is absolutely a necessity, as we are now using as such a part of the room used for the purpose of demonstrating farm machinery, and often there is no room for our trucks.

Conclusion

The labor of organization and service has been very strenuous during the past two years owing to war, labor conditions and prevailing prices.

CHANGES IN PERSONNEL

The following appointments have been made since the publication of the last report:

Administration

<i>Name</i>	<i>Position</i>
Mrs. S. A. Wilkins.....	Statistician
W. M. Hillegeist.....	Recorder
Mabel Reese.....	Assistant Accountant
Florence Newton.....	Assistant Accountant
Alfred Shadick.....	Cashier

School of Agriculture

E. C. Auchter.....	Professor of Horticulture
R. V. Truitt.....	Assistant in Entomology
Richard Wellington.....	Professor of Vegetable Culture
A. S. Thurston.....	Assistant Professor of Floriculture

School of Engineering

C. T. McCurdy.....	Assistant in Mechanical Engineering
M. A. Pyle.....	Instructor in Civil Engineering
S. S. Steinberg.....	Assistant Professor of Civil Engineering
H. B. Hoshall.....	Assistant Professor of Mechanical Engineering
Wallace Lawrence.....	Assistant in Mechanical Engineering
Donald C. Hennick.....	Assistant in Mechanical Engineering
H. D. McMurtray	Assistant Professor of Physics and Electrical Engineering

School of Education

L. A. Emerson.....	Professor of Trade and Industrial Education
Edna B. McNaughton.....	Professor of Home Economics Education
M. M. Proffitt.....	Professor of Trade and Industrial Education

School of Chemistry

Paul Emerson.....	Instructor in Bacteriology
L. H. Van Wormer.....	Assistant Professor of Chemistry
T. B. Leith.....	Assistant Professor of Chemistry
F. C. Brimer.....	Inspector
Neil E. Gordon.....	Professor of Physical Chemistry
Henry R. Walls.....	Inspector
C. F. Bletsch.....	Inspector
R. C. Wiley.....	Assistant Professor of Chemistry
Ruth Malone.....	Stenographer

School of Home Economics

Agnes Saunders.....	Acting Dean
Mrs. F. A. Wirt.....	Assistant Professor of Textiles and Clothing
Frieda Wiegand.....	Assistant Professor of Textiles and Clothing
Mary Walton.....	Instructor
Marie Mount.....	Professor of Home and Institutional Management

School of Liberal Arts

H. W. Stinson.....	Assistant Professor of Languages
T. B. Thompson.....	Professor of Economics and Sociology

Division of Animal Industry

A. R. Ward.....	Professor of Pathology
DeVoe Meade.....	Professor of Animal Husbandry
J. A. Gamble.....	Professor of Dairy Husbandry
E. M. Pickens.....	Professor of Bacteriology and Pathology
C. C. Shivers.....	Assistant in Biological Laboratory
M. F. Welsh.....	Assistant Professor of Bacteriology and Pathology
Flora L. Yaden.....	Clerk and Stenographer
Louise Reilly.....	Clerk and Stenographer

Department of Military Science and Tactics

Capt. George A. Matile.....	Professor of Military Science and Tactics
Capt. F. W. Stone, Jr.	
Assistant Professor of Military Science and Tactics	
Sergeant Wm. McManus.....	Assistant

Miscellaneous

Miltanna Rowe.....	Librarian
Ruby Crawford.....	Nurse

The following resignations have taken place since September 30, 1917:

Administration

<i>Name</i>	<i>Position</i>
H. T. Harrison.....	Accountant
Florence Newton.....	Assistant Accountant

School of Agriculture

R. C. Rose.....	Professor of Botany
B. W. Anspen.....	Professor of Landscape Gardening
G. H. Cale.....	Assistant in Bee Culture
R. V. Truitt.....	Assistant in Entomology
Herman Beckenstrater.....	Professor of Pomology
*E. F. Stoddard.....	Professor of Vegetable Culture

*Deceased

School of Engineering

G. P. Springer.....	Assistant Professor of Civil Engineering
W. W. Smelker.....	Instructor in Mechanical Engineering
J. W. Watkins.....	Assistant in Mechanical Engineering
J. M. Smith.....	Assistant Professor of Civil Engineering
R. S. Goulden.....	Assistant Professor of Mechanical Engineering
C. T. McCurdy.....	Assistant in Mechanical Engineering
Wallace Lawrence.....	Assistant in Mechanical Engineering

School of Education

Louis Ortmayer....	Professor of History and Secretary of Y. M. C. A.
Perley F. Brookens.....	Assistant Professor of Economics
L. A. Emerson.....	Professor of Trade and Industrial Education

School of Chemistry

S. C. Dennis.....	Assistant Professor of Bacteriology
H. J. White.....	Instructor in Chemistry
F. D. Jarrell	Instructor in Chemistry

C. G. Remsberg.....	Assistant in Chemistry
A. T. O'Neil.....	Assistant in Chemistry
Paul Emerson.....	Instructor in Bacteriology
F. C. Brimer.....	Inspector
E. M. Grimm.....	Stenographer

School of Home Economics

Agnes Saunders.....	Acting Dean
Mrs. F. A. Wirt.....	Assistant Professor of Textiles and Clothing
Mary Walton.....	Instructor

Division of Animal Industry

R. H. Ruffner.....	Professor of Animal Husbandry
A. C. Stanton..	Assistant Professor of Dairy Husbandry
S. E. Isacson.....	Professor of Pathology
A. R. War.....	Professor of Pathology

Miscellaneous

Lillian E. Conner.....	Librarian
Mrs. M. T. Moore.....	Matron
Lt.-Col. John Pitcher.....	Professor of Military Science and Tactics

The following instructors were appointed for the Summer School session, June 24 to August 1, 1919:

Edward F. Webb
 Kate Kelly
 Elizabeth Murphy
 Adele Stamp
 M. Annie Grace

The following instructors were appointed for special work in connection with the unit of the Students' Army Training Corps located here from October 1 to December 31, 1919:

<i>Name</i>	<i>School</i>
A. D. Parthemore.....	School of Education
A. E. Benson.....	School of Education
W. Q. Ranft.....	School of Education
W. P. Wittmer.....	School of Education
P. O. Coblentz.....	School of Education
L. E. Carlson.....	School of Education
F. N. Bashore.....	School of Education
E. T. Riggs.....	School of Education
Hilda Wilrich.....	School of Liberal Arts
Lillian M. Jones.....	School of Liberal Arts

The following officers were detailed here by the United States War Department in connection with the unit of the Students' Army Training Corps, October 1 to December 31, 1919:

Captain Cedric C. Benz
Lieutenant Francis B. Carter
Lieutenant J. L. Edwards
Lieutenant D. S. Elkins
Lieutenant F. W. Gumboldt
Lieutenant Frank H. Jacobs
Lieutenant Austin T. Moore
Lieutenant James H. Young

The Agricultural Building

In accordance with the provision of the Legislative Assembly, Chapter 681, Laws of 1916, \$174,000,000 was appropriated for the construction of an Agricultural Building at the Maryland State College. After competitive bids, the contract was awarded to the H. D. Watts Company on March 22, 1917, their bid being very much lower than any other received. Plans for the building were made under the direction of the Board of Trustees by Flournoy & Flournoy, architects, who were retained also to supervise the construction. After the completion of the plans, the work was rapidly pushed and considerable progress was made in the construction of the building before the opening of the war period.

On May 27, 1918, by instruction of the Board of Trustees, a letter was filed with the Governor, presenting a brief resume of the facts in the case, with the hope that the matter might be adjusted in the Legislative session then in progress. The matter, however, was received too late for full consideration. It is the opinion of the Board that, in view of the justice of these claims, the matter should be presented for consideration to the Legislative session for 1920. The records in connection with the construction of the building have been carefully examined by a disinterested expert, and the Board is assured that the claims are reasonable and just. The situation as it stands at the present time is shown by the following table.

	Contract and Extras Allowed			Losses Claimed on Account of War, etc.
	Total Approved	Paid	Balance Due	
H. D. Watts Co.	\$143,281.27	\$141,097.69	\$2,183.58	\$13,961.98
Standard Engineering Co. .	25,247.54	24,900.00	347.54	.....
Walter E. Hill & Co., Con- tractors.	1,985.11	1,800.00	185.11	60.80
Walter E. Hill & Co., Com- missions.	1,009.90	800.00	209.90	240.00
Flournoy & Flournoy.	5,983.72	5,928.36	55.36	2,378.00
Totals.	\$177,507.54	\$174,526.05	\$2,981.49	\$16,640.78

Amount due on Contracts and Allowed Extras. . . . \$ 2,981.49
Cash on hand 232.43

Amount required to complete payments. \$ 2,749.06
Additional Claims 16,640.78

Total \$19,389.84

The Extension Service

T. B. SYMONS, *Director*

(A full report of this Service is issued separately; only a general summary is presented here.)

Introduction

Great progress has marked the extension activities of the institution during the past two years. At the approach of the season of 1918 every nerve was strained to increase production to meet the national emergency. The farmers of Maryland responded generously and patriotically to the requests of the Government to increase the acreage and yields of all food crops and largely increase their live stock. As a result, a commendable increase in the standard food crops was secured, together with a large increase in live stock, especially hogs and sheep.

Greater demands and responsibilities were placed upon the Extension Service of the State College in cooperation with the United States Department of Agriculture during this period than ever before. Naturally it was this agency of the State College which led the great agricultural and conservation programs throughout the critical period. The record thus made was only accomplished through the untiring efforts and earnest cooperation of every member of the organization, and the generous response of the great body of farmers who received our suggestions and who permitted the Extension forces to render a greater service to them than ever before.

Since the armistice, demands for our work have not lessened—in fact, there is a decided increase in requests for assistance during this readjustment period. Furthermore, the Service has been handicapped during the present fiscal year through a curtailment of emergency funds. Demands upon the agents and specialists have been more urgent, while our funds have been curtailed by Congress.

In many sections of the State the farmers and farm women, and people generally, during the war period realized more fully than ever before the assistance that our agents could be to them, and naturally the work has grown during the present period. In many counties assistants to the agents are badly needed, but all have been withdrawn on account of lack of funds; in addition, other expenses have been curtailed.

The farm-labor situation has been and is still very acute. Nevertheless, with larger crops than ever before during 1918, the actual

loss due to lack of labor in the State was insignificant. This has been due in a large measure to the manner in which the farmers and their families made every sacrifice by continued labor in the field and in the home.

The Extension Service, in conjunction with other agencies, has been a potent factor in relieving the situation so far as it could be relieved. The cooperation that some of the agents have been able to promote between business men and farmers to reduce the labor shortage during harvest seasons has been of inestimable value. The Service was not stampeded into hysterical action in any county or section, and the result proved the resourcefulness of the Maryland farmer when faced with a difficult situation.

The labor situation was clearly and frankly placed before the farmers by the Service in the spring of 1918 through a series of meetings held in all counties. Means and methods were presented to show how the labor shortage could be lessened. The campaign brought about gratifying results. Naturally the labor situation was not so critical the past season, both on account of the shortage of crops and more available men.

There is now, and has been for several years, a considerable shortage of good monthly farm laborers in the country.

A great tribute should be paid to the farm women of the State and to our women agents. They have done a great and noble work. The campaigns for conservation in cooperation with the Food Administration and other agencies during the war period were most successful. The wonderful production of farm, town and city gardens and the home conservation of these products have indelibly impressed upon many households the possibilities of home provision. This work will mean much in future economics for our people.

During the period of anxiety and apprehension, we have been able to maintain our equilibrium, maintain our prestige, and demonstrate our ability to cooperate with every legitimate organization whose aims and desires have been in the interest of the common end. We have been exceedingly fortunate that no wires have been crossed in this State to the detriment of the work, and that a fuller realization on the part of the public generally of the possibilities and necessity of the work of the Service is evident upon all sides.

These manifold and gratifying results during the war period were obtained through the able leadership of President Woods and his ardent support in every field of our endeavor, and especially through the financial assistance rendered through his aid by the State Council of Defense. Equally generous and important has been the assistance rendered by the States Relations Service of the United States Department of Agriculture. The leadership of Dr. Knapp has demonstrated his interest in the welfare and promotion of this Service, and it has been through the generous allotment of Federal Emergency funds that we have been able to carry on the work during the critical period upon such an extensive scale.

The season of 1919 has been a great disappointment to farmers in many sections of the State, particularly the Eastern Shore and Southern Maryland. Unfavorable weather conditions, due to too much rain and severe storms, have caused great losses—running into millions of dollars. The increased acreage of wheat of about 100,000 acres over the normal acreage which was secured through the campaign in the fall of 1918 was offset by a poor set of grain, and later a prolonged wet spell which ruined 50 per cent. of the wheat in the State.

Similarly, the tomato crop is the shortest raised in the State for many years. The potato, tobacco and corn crops will also be below normal.

The season of 1919 will be recorded as one of the most trying that the farmers of the State have experienced during recent years. The increased cost of food and clothing following in the wake of the war, together with the poor season, will serve to strain the resources of many of our farmers. Owing to this condition, the need for assistance in many sections during the coming year will be even more urgent than in the past. Farming will be on a different plane in the future from that of the past. Farming must be profitable, and to be profitable, modern methods of agricultural practice must be adopted. This Service aims to reach every man on the farms, and to render every possible aid toward the development and improvement of agricultural conditions in the State. A brief summary of the work of the Service will be given under the respective heads.

Administration and Relations

The administrative work of the Service has largely increased during the past two years, due to the enlargement of the Extension forces and the large amount of emergency work. We have added one District Agent and Specialist to aid, with the Assistant Director, in the supervision of the men's work, and three District Agents and Specialists have been added to aid the Home Demonstration work. The administration of the Service under present conditions has been most agreeable and satisfactory from every standpoint.

The clerical work has been exceptionally heavy, and it has been difficult to retain clerks at salaries which we have been able to pay. Eight clerks and stenographers are necessary to care for the office work, and even with this force we have not been able to keep our work up to schedule. An average of about sixty thousand (60,000) first-class letters have been mailed annually from headquarters, while the total pieces of mail sent from the office averages about two hundred thousand (200,000).

The relations of the Extension representatives with the other divisions of the College have been most agreeable, and their hearty cooperation has greatly aided in the prosecution of the work. Plans are under way through the more complete organization of subject-matter departments in the institution to permit a more systematic

exchange of ideas and plans between the several workers in any given field.

The relations of the Service with the public school authorities are agreeable and cooperative. Particularly is this true with the Boys' and Girls' Club work, which is conducted in cooperation with the county school officials.

State Organizations

The farmers' organizations of Maryland are federated into the Maryland Agricultural Society. Six industries are now organized and affiliated with the Society. Just as soon as other industries show strength and willingness to organize, the Society welcomes their affiliation. The Director of Extension is Secretary of the Agricultural Society, and various members of the Service are secretaries of the respective affiliated associations. By this means, the Extension forces are in close touch with the organized farmers of the State. There is also a close association with the State Grange organization. There is, therefore, a unity of purpose of all forces in advancing the agricultural interests of the State.

Sources of Extension Revenue

During the present fiscal year ending June 30, 1920, there is available for Extension work forty-three thousand five hundred and sixty-nine dollars and seventeen cents (\$43,569.17) from the Federal Smith-Lever fund; twenty-eight thousand dollars (\$28,000) from the State Smith-Lever fund; fifteen thousand dollars (\$15,000) from the United States Department of Agriculture; nineteen thousand three hundred and sixty-six dollars and eighty-three cents (\$19,366.83) from the Special Federal Extension fund; forty-eight thousand dollars (\$48,000) from the County Demonstration fund; five thousand and sixty dollars (\$5,060) from the General Extension fund; about two thousand dollars (\$2,000) of the State Horticultural fund of eight thousand dollars (\$8,000) is used for Extension work. In addition, there is about twelve thousand dollars (\$12,000) contributed by the various counties and other sources for aiding in the efficiency of County Agent work.

The failure of the State through a misunderstanding to contribute the exact offset to the Federal Smith-Lever fund for this year has been badly felt, especially as the Government Emergency fund has been reduced from seventy-five thousand dollars (\$75,000) to nineteen thousand three hundred and sixty-six dollars and eighty-three cents (\$19,366.83) and there are no funds available from the Council of Defense.

The increase in traveling expenses for specialists and agents and the cost of supplies made necessary under present conditions make it very difficult to meet our absolute needs. In fact, we have been compelled to drop some specialists and agents, and men and women agents are leaving the State for higher salaries offered elsewhere.

The policy of having County Agent work supported from public funds, Federal, State and County, enables the agent to be free to serve all interests and all the people of a county. This, in my opinion, is the only basis under which the work should be conducted.

Considerable difficulty has been experienced in adjusting expenditures to the items of the State budget. It is not easy to anticipate two years in advance the exact expenditure of Extension funds by items. It is hoped that the State will appropriate its funds for this work in lump sums, particularly the State Smith-Lever fund. This would in no way interfere with the State budget, and would make the administration of the Extension funds more workable and satisfactory from every standpoint.

Office Accommodation, Equipment, Etc.

April 1, 1918, the offices and force of the Extension Service were transferred from the temporary building near the B. & O. R. R. to the first floor of the new Agricultural Building. The Service occupies about eight thousand (8,000) square feet in the new building. The building furnishes excellent facilities for the Extension offices. Necessary equipment in the form of desks, chairs, bookcases, etc., has been secured, so far as funds would permit. Much additional equipment in the form of demonstration material is needed, such as slides, charts, films, illustrative material, etc. It is also especially desired to place illustrative billboards in various public buildings where farmers gather to illustrate and encourage live stock and to give information along various other lines. A design for such boards has been prepared which is very attractive and useful.

Changes in Personnel

Comparatively few changes were made in the personnel of the Service during the war period. Several changes have been made of late. During the fiscal year the following changes have been made:

T. E. McLaughlin was appointed District Agent and Specialist, effective July 1, 1918; C. L. Opperman was appointed Agricultural Editor on January 1, 1919, vice George F. Jordan, resigned; W. R. Ballard, Garden Specialist, resigned, effective July 1, 1919; Eston F. Fox, Emergency Boys' Club Agent, resigned, effective July 1, 1919; H. W. Fristoe, Emergency Boys' Club Agent, resigned, effective July 1, 1919; E. G. Jenkins was appointed State Boys' Club Agent on August 15, 1919, vice R. F. McHenry, resigned; Peter Chichester was appointed Assistant Boys' Club Agent on October 1, 1919, vice Dowell J. Howard, resigned.

F. W. Fuller was appointed Agent for Carroll County, vice Grover Kinzy, resigned; B. B. Derrick was appointed Agent for Harford County, vice T. E. McLaughlin; J. A. Towler was appointed Agent for Garrett County, vice A. G. Middleton, resigned; J. F. Davis was appointed Agent for Dorchester County, vice C. E. Leathers, deceased; G. W. Norris was appointed Agent for Anne Arundel County, vice

H. C. Whiteford, resigned; K. C. Cole was appointed Acting Agent for Allegany County, vice John McGill, Jr., resigned; H. B. Derrick was appointed Agent for Kent County, vice L. L. Burrell, resigned; C. H. Taylor, Agent for Prince George's County, resigned, effective September 1, 1919; E. O. Anderson, Agent for Caroline County, resigned, effective September 15th, 1919.

Miss Adice S. Jones was appointed Girls' Club Specialist on March 15, 1919. Miss Catherine M. Cowsill was appointed Agent for Montgomery County, vice Miss Helen Erickson, resigned; Miss Blanche Gittinger was appointed Agent for Harford County, vice Miss Margaret Schmidt; Miss Ellen Davis was appointed Agent for Prince George's County on March 1, 1919; Miss Olive Mitchell was appointed Agent for Wicomico County on April 1, 1919; Miss Julia Etchison was appointed Agent for Charles County, vice Miss Viola Poole; Miss Sue W. Frick was appointed Agent for Washington County, vice Miss Adice S. Jones; Miss Esther Wotring was appointed Assistant Agent for Washington County on May 15, 1919; Miss Ella Rhodes was appointed Assistant Agent for Garrett County on June 1, 1919; Miss Emily Kellogg was appointed Agent for Baltimore County on June 1, 1919; Miss Mary Byrn was appointed Agent for Queen Anne's County on June 15, 1919; Miss Dorothy Neibert was appointed Agent for Allegany County on June 1, 1919, vice Mrs. Leona H. Powell, resigned; Miss A. Leah Gause was appointed Agent for Calvert County, effective July 24, 1919; Miss Frances Stuart was appointed Agent for Dorchester County, effective July 1, 1919; Miss Susan Hill was appointed Agent for Kent County on July 1, 1919, vice Miss Annie L. Copper, resigned; Miss Katherine Murrin was appointed Agent for St. Mary's County on July 1, 1919.

Our policy is to employ only men and women who have received training from a recognized institution and who have had practical experience. The character of work demands the highest type of men and women obtainable. The people of the State expect our representatives to be leaders in their work. Appointments to the Service are made subject to the approval of the President of the College and the officials of the United States Department of Agriculture. Nothing is so expensive as a constant change of men, either as County Agents or Specialists. We must provide higher salaries to keep the character of men and women that the people of the State demand.

Methods Used for Increasing Efficiency of Workers

The administrative officers are constantly following closely the work of the agents, making suggestions and presenting the accomplishments of the agents in different fields of labor which could be adapted to local conditions. A monthly conference of all specialists is held regularly, wherein the work of the Service is discussed. By this means the progress of the various lines of work in each county is outlined and the weak spots indicated. A summary of the weekly reports of

all agents is prepared and circulated monthly throughout the Service, so that each can observe what others are doing. District conferences of the agents are held for the purpose of exchange of ideas and discussion of new projects.

Agents are required to submit with their annual reports a map of their counties on which is indicated the location of demonstrations, organizations, farm visits, and other work which had been conducted during the year. This plan of visualizing our work has been adopted by the United States Department of Agriculture throughout the Southern States. The plan serves to illustrate the part of the county or the character of work that the agent is neglecting or emphasizing.

The Assistant Director, Dr. F. B. Bomberger, has rendered able assistance in organization work and in the general administrative work of the Service.

PUBLICATIONS

A total of ten bulletins have been issued by the Service during the past two years. The third and fourth annual reports of the Service have been distributed. A total of 72,500 copies of bulletins and reports have been printed and distributed in the State. The State College Journal has been issued monthly by the Service. In addition, fifteen circulars on timely subjects, making a total of 45,000 copies, have been printed.

Mr. C. L. Opperman has been associated with the Service as Agricultural Editor. He has been able to supervise and systematize the preparation and distribution of Extension publications.

COUNTY DEMONSTRATION WORK

This project provides for the Extension and Demonstration work conducted by the men agents. Too much credit cannot be given the agents for their devotion to duty during the past two years and the splendid results achieved. Twenty-three agents, one to each county of the State, with assistants in some counties prior to July 1, 1919, have been engaged.

July 1, 1918, T. E. McLaughlin, County Agent in Harford County, was appointed District Agent and Specialist. He has been of great assistance in visiting and installing agents and otherwise aiding in their supervision. The following summary for last season's work of the agents is given—the results of this year's work were not available for this report:

Number of Farm Crop Demonstrations.....	2,464
Number of Orchard Demonstrations (496,817 trees) ..	961
Number of farmers cooperating in demonstrations with fertilizers, manure, silos, lime.....	3,855
Number of head of live stock introduced at sugges- tion of agents	21,875

Number of chickens raised under poultry demonstration work	20,732
Number of pure-bred live stock introduced at suggestion of agents	780
Number of farmers' organizations perfected by agents	186
Number of visits to farmers by County Agents.....	26,892
Number of miles traveled by County Agents.....	230,789
Number of farmers' meetings held under auspices of agents	2,554
Total attendance at such meetings	179,096
Number of field meetings held	611
Total attendance at these meetings	24,434
Number of official letters written	34,427
Number of circular letters prepared and distributed..	64,702

The following County Agents have been employed during the year: Allegany County, John McGill, Jr., agent, assisted by K. C. Cole, Ira V. McKenzie and Virgil C. Powell; Anne Arundel County, G. W. Norris; Baltimore County, J. F. Hudson; Calvert County, J. H. Drury; Caroline County, E. O. Anderson; Carroll County, F. W. Fuller; Cecil County, J. H. Knode; Charles County, J. P. Burdette; Dorchester County, J. F. Davis; Frederick County, P. A. Hauver; Garrett County, J. A. Towler; Harford County, B. B. Derrick; Howard County, J. L. Fidler; Kent County, Horace B. Derrick; Montgomery County, F. J. Van Hoesen; Prince George's County, C. H. Taylor; Queen Anne's County, O. C. Jones; St. Mary's County, G. F. Wathen; Somerset County, C. Z. Keller; Talbot County, E. P. Walls; Washington County, T. L. Smith; Wicomico County, G. R. Cobb; Worcester County, E. I. Oswald.

Negro Work

Three colored men agents have done excellent work during the past two years. One devoted his activities to Southern Maryland counties and two to the lower and upper counties of the Eastern Shore. It was hoped to have an agent appointed for Howard, Frederick and Anne Arundel Counties, but funds were not available. These agents have been of great assistance to the colored farmers of these sections. They conducted five hundred and forty-eight (548) demonstrations in farm crops and live stock. They have aided in the control of hog cholera, organized several rural clubs, and conducted Boys' Club work. Several community exhibits have been held, showing the growing interest among negroes in the improvement of their methods of growing farm crops, as well as in raising live stock. The future of the work holds out splendid possibilities for improving the citizenship and general welfare of our colored farmers. The colored agents have done splendid work in war activities and encouraged conservation of farm products during the war period.

The following colored agents have been employed during the year:

James F. Armstrong, Southern Maryland.

J. W. B. Tull, Upper Eastern Shore.

Louis H. Martin, Lower Eastern Shore.

HOME DEMONSTRATION WORK

Miss Venia M. Kellar, State Home Demonstration Agent, reports that splendid results have been secured in the Home Demonstration work during the past two years. The war awakened the people to the need of women agents in assisting in food production and conservation as applied to the home.

The women agents worked in cooperation with the women's section of the Council of Defense and the Food Administration—in fact, in most cases the women agents were able to take the lead in conducting the work in the counties. Twenty-three women agents, one to each county, have been employed during the past two years. This has been possible through the Emergency funds. In practically every county the work is established and demanded by the people. We must bear in mind that the surest way to solve many rural problems is through the homes. We must have contented farm home makers. We must remove drudgery from the farm home. We must develop the several aspects of country living. The Home Demonstration work in its many aspects seeks to improve this condition and demonstrate how these ideals can be realized. Then again, we should aim to conserve our man and woman power in the country, as well as throughout the State, for that matter. This means better homes, better food, better conditions and surroundings during working hours, better recreation, and the development of moral, social atmospheres that will make for a satisfied rural community. All of this is wrapped up in the work of the men and women agents in cooperation with other agencies.

The women agents have promoted the formation of community councils in a number of counties, which assist in advising the agents as to the character of work that is most needed. From five to twenty-five community organizations have been perfected in every county of the State during the past year. Fourteen community kitchens were established during the summer of 1918. These kitchens were used as centers where canning and drying were done under the supervision of the agents. A large number of community exhibits or fairs have been promoted and aided by the agents. These fairs have a distinct educational value.

Special effort has been made to secure a large enrollment in the Girls' and Women's Clubs in the several counties. Monthly programs for work were presented at club meetings. Unusual success attended the campaign for hot school lunches in rural schools. The District Agents and County Agents have done valuable work in teaching practical dietetics to home makers. These lectures and demonstrations are presented to club meetings of girls and women and then carried out in the homes.

A special campaign has been conducted in labor-saving devices for the farm homes. Special exhibits have been prepared by the agents and installed in store windows and other public places. Our Home Economics forces are in great demand for Institutes, Movable Schools, and Community Short Courses. This shows the interest that farm women are giving to this important work.

Urban Work

During the war period seven Emergency Agents have been employed in Baltimore, Hagerstown and Cumberland. In each city, and even in each center of each city, it has been necessary to adopt a plan of work that would meet the needs of the different groups of people. A large amount of garden work was also conducted in these cities. Several centers were opened for canning and drying of products.

Colored Work

The results of Home Demonstration work among the colored people have been most satisfactory. They have responded to the instruction given by the agents in a most gratifying way. Five colored agents were employed during the last year in Southern Maryland, the Eastern Shore and in Baltimore City.

A summary of last season's work by the women agents is as follows:

Number of general meetings held	1,532
Estimated attendance	35,516
Number of miles traveled	55,788
Number of girls enrolled in canning clubs (white and colored)	2,533
Number of women's clubs organized	91
Number of women and girls influenced by instruction in Emergency work	20,833
Total number of containers canned or preserved.....	614,460
Total number of pounds of fruit and vegetables stored	41,224
Total number of gallons of vegetables brined.....	26,699
Number of demonstrations given at individual homes.	742
Number of community shows held	21
Number of community organizations formed	103

Miss Kellar has been assisted by Misses Jones, Stephenson, Day and Schmidt as District Agents and Specialists. The following agents have been employed in the counties:

Allegany County, Miss Dorothy Neibert; Anne Arundel County, Mrs. Georgiana Linthicum; Baltimore County, Miss Emily Kellogg; Calvert County, Miss A. Leah Gause; Caroline County, Mrs. Edith G. Norman; Carroll County, Miss Rachel Everett; Charles County, Miss Julia Etchison; Dorchester County, Miss Frances Stuart; Frederick County, Miss Ella Rhodes; Garrett County, Miss Frances Gerber;

Harford County, Miss Blanche Gittinger; Howard County, Mrs. Nell Lawson; Kent County, Miss Susan Hill; Montgomery County, Miss Catherine Cowsill; Prince George's County, Miss Ellen Davis; Queen Anne's County, Miss Mary Byrn; Somerset County, Miss M. Louise Mills; St. Mary's County, Miss Katherine Murrin; Talbot County, Mrs. Olive K. Walls; Washington County, Miss Sue W. Frick; Worcester County, Miss Lucy J. Walter; Wicomico County, Miss Olive Mitchell.

BOYS' CLUB WORK

The purpose of club work is not only to arouse the interest of farm boys in their home and school work, but in many cases it serves to introduce new methods of agriculture into the community and to standardize desirable breeding stock of either farm crops or live stock. The boys and girls are the hope of the future. It is our duty and privilege to spend every possible effort in cooperation with other agencies to give them an insight into the financial and social possibilities of farm life. Great progress has been made in popularizing the work. Leaders in all business fields are realizing the possibilities of club work when properly conducted. Pure-bred pig-breeding clubs have been organized in several counties by means of cooperation extended by bankers. In these instances banks loaned money to boys to purchase pure-bred pigs. As many as seventy pure-bred hogs have been introduced into a county by the boys. These hogs are exhibited at the county fairs, and thus much interest is aroused in the county in pure-bred stock. In some sections, pure seed corn is brought in by the boys; in others, potatoes or poultry or other lines of club work. This character of work offers immense possibilities. It will grow; it is popular and it is profitable. It is club work of an ideal type. It is solving practical problems. More than 3,000 farm boys are doing this class of work, and in cooperation with the school authorities the work will develop into large proportions. The accompanying map indicates the scope of the Boys' Club work at the beginning of this season. The State prize winner in corn club work, Mr. Arthur L. Harris, of Kent County, raised 112.24 bushels of corn on his club acre in 1918. The total value of the products raised by the boys in 1918 was estimated to be worth fifty-six thousand three hundred and sixty-eight dollars and ninety-two cents (\$56,368.92). This serves to illustrate the scope of the work. The club work until quite recently has been conducted under the leadership of Mr. R. F. McHenry, assisted by Stanley E. Day, Dowell J. Howard, Eston F. Fox and H. W. Fristoe.

The following summary of club work for last season is given:

Number of boys enrolled in club work.....	2,099
Number of club meetings held.....	808
Number of club members present at meetings.....	11,160
Number of other people present at meetings.....	28,647
Total value of products grown by boys.....	\$56,368.92

Average number of bushels of corn per acre.....	56.34
Average number of bushels of potatoes per acre.....	149.928
Average number of pounds, gain per pig.....	171.5
Number of personal visits to club members by club agents	5,244
Number of miles traveled by Boys' Club Agents.....	36,274
Number of official letters dictated by State Boys' Club Agent	4,008
Number of circular letters, instruction sheets and other miscellaneous circular materials sent out to club members	56,897
Total value of products grown by Emergency Club workers	\$140,579

Special Project Work

Of necessity, only a brief mention can be made in this report of the work of the Specialists of the Service, who conduct their work with the County Agents. The Specialists are available for the agents and farmers to deal with the many problems in agriculture requiring expert advice.

Agronomy Extension Work

Mr. F. W. Oldenburg has served as Specialist in Agronomy. He has cooperated with the agents in conducting farm crop demonstrations, such as soy beans, hairy vetch, alfalfa, permanent pastures, use of fertilizers, lime, and better methods of cultivation. He had charge of the corn and wheat contest offered by the Food Administrator, Mr. Edwin G. Baetjer, which entailed a large amount of work. More than \$12,000 was offered as prizes for best yields in corn and wheat by Mr. Baetjer, to stimulate production.

Animal Industry Extension Work

The work of the Specialist in Animal Husbandry, Dr. S. S. Buckley, has been conducted in cooperation with the United States Bureau of Animal Industry. Special attention was paid toward developing the swine production in Maryland during the war period. No State offers better opportunities for hog production than Maryland. Through the efforts of the Service, a large increase in hogs has been secured for the State—a larger per cent. than was requested by the Department. Dr. Buckley carried the campaign for more hogs in every county through farmers' meetings, community short courses, etc. He has also aided the Boys' Club work in promoting the breeding phase of pig club work, in which many projects are under way.

Considerable interest has been aroused in the National Ham and Bacon Show. Dr. Buckley arranged for Maryland's exhibit, and Maryland home-cured meat was awarded ten, including the first prize, out of a possible fifteen awards.

Mr. T. E. McLaughlin has, in addition to aiding in the supervision of the agents, devoted his energies toward promoting the horse, mule,

and beef cattle industries of the State. He has also assisted in the dairy organization work.

Dr. I. K. Atherton and his associates, Dr. P. J. Cass, Dr. C. C. Cole and Dr. E. J. McLaughlin, have cooperated with the Service in the control of hog cholera. The control of this disease has presented a difficult problem. Every effort has been made by the organization of farmers to prevent the spread of the disease from the first infection. Hog cholera is a great handicap toward developing the hog industry, and now that there is so much interest aroused in hog raising there should be no relaxation in the campaign for education of the growers and the prevention and control of the disease.

Horticultural Extension

Horticulture is a growing industry in the State and demands for assistance continue to increase. Mr. S. B. Shaw, Specialist in Horticulture, has a large number of demonstrations in commercial orcharding in progress, also home orchards. Forty field demonstrations in pruning, cultural work, etc., were held during the past year. Mr. Shaw has aided the agents in horticultural problems, assisted in farmers' institutes, short courses, and Boys' and Girls' Club work.

During the war period emphasis was placed on home garden work. Mr. W. R. Ballard served as Specialist temporarily, to meet the emergency demands. War gardens were popular in all cities and towns. The State Food Administrator offered \$12,600 as prizes for gardens in the State. Mr. Ballard supervised this contest. A total of 170,040 producing crops, estimated as being worth \$6,880,900, were supervised by all forces of the Service.

Dairy Extension Work

The past two years have been a critical period for the dairy interests of the State. The increased price of all feeding stuffs has caused great unrest in the industry. The Extension Service has conducted two milk-cost surveys to supplement the one taken in cooperation with the State Council of Defense in December, 1917. These surveys were taken for a week during the periods of light and heavy milk production. The surveys have been of much assistance in arriving at just figures for the sale of milk.

Mr. G. E. Wolcott, our Specialist in Dairying, in cooperation with the Dairy Division of the United States Department of Agriculture, has aided in this work, in addition to conducting cow-testing association herd records and bull association work. The Specialist has assisted the County Agents and farmers in building silos, dairy barns, milk houses, etc. Special attention has been given to educational work in dairying at fairs, community short courses, and farmers' meetings.

Farm Machinery Extension Work

Remarkable progress has been made in Farm Machinery work during the past year. War conditions and the shortage of farm labor

have greatly emphasized the need of labor-saving machinery. Mr. F. A. Wirt was secured as Specialist in this work during the spring of 1918. As a result of Mr. Wirt's earnest efforts, this Service has established a record in demonstrating the use of power machinery, in promoting cooperation between implement manufacturers, dealers and farmers, and rendering service to the owners of tractors and other kinds of power machinery. Many tractor demonstrations have been held in all parts of the State, with a large attendance of farmers. Several threshermen's schools were held this year, with a view to aiding these men in conducting public machines. There is great demand for the expansion of this work.

Poultry Extension Work

Mr. H. W. Rickey, Specialist in charge of this activity, reports much interest in the development of the poultry industry in the State. During the winter several successful demonstrations in winter egg production were carried on in cooperation with the agents. The results of these demonstrations established their value as a vital part of Poultry Extension work. The Specialist has given instruction by lectures and practical demonstrations at farmers' institutes, movable schools, and other meetings. He has greatly aided in the girls' poultry club work.

Rural Organization and Marketing

The greatest accomplishment of the Service during the past two years has been in the promotion of rural organizations in the State. Dr. F. B. Bomberger, Assistant Director and Specialist in Organization, assisted by the County Agents, has been able to awaken community interest and develop community leadership in many of our counties. Comprehensive plans were furnished for organizing communities that seemed most suited to the section. Strong county organizations have been formed by the cooperation of the communities. More than five hundred organizations are working actively for the betterment of rural sections.

The Specialist has assisted in the formation of several National Farm Loan Associations in the counties. The Maryland Sheep Growers' Association has been formed, and greatly increased interest has developed in this industry. Special efforts have been made by the Association to have the State Dog Law vigorously enforced. Much assistance has been rendered the dairymen in the organization of the State Association, so that the milk produced by its members could be sold in a cooperative manner.

Marketing of Farm Products

Some progress has been made in the study of marketing conditions in the State. Through cooperation with the Bureau of Markets, a Specialist was assigned to a survey of the distribution of fruits and

vegetables last summer. A further study of our city markets and the handling of farm products has been made the past summer. Through lack of funds, the work could not be carried on. Assistance has been rendered the growers in the proper handling and packing of various products.

It is evident from all sides that the proper distribution of our farm products presents an important economic problem that must be investigated from every angle.

Extension Work in Entomology and Pathology

The State Entomologist, Prof. E. N. Cory, and State Pathologist, Prof. C. E. Temple, with Mr. W. C. Travers, have conducted a large amount of extension work in the control of insect pests and plant diseases. They have assisted the County Agents in conducting demonstrations for the control of pests, which have resulted in large financial returns to the growers. This is particularly true in the control of the curculio, codling moth, brown rot, strawberry weevil, potato and tomato blight and wilt. Mr. Travers conducted demonstrations in nine orchards in 1918 with a cost of spraying at \$1,909.18, while the fruit from the orchards brought thirty-one thousand one hundred and twenty-two dollars and five cents (\$31,122.05).

Splendid results have been secured in the use of wilt-resistant seed in the tomato-growing sections, and in spraying for the control of blight.

The spraying of potatoes in Western Maryland has been emphasized, and a large acreage of certified seed is now grown in that section through the efforts of the Service. This work has been highly successful in demonstrating to the large and small grower the possible financial returns by employing modern methods of treatment for the control of both insects and diseases.

We have not been able to meet the demands for demonstrational work in these various fields. A further report on the work of the Entomologist and Pathologist will be given in the report of the State Horticultural Department.

A partial summary of the Specialists' activities is given:

Number of meetings attended.....	1,245
Number of addresses delivered.....	590
Number in attendance at meetings.....	114,220
Number of visits to demonstrators and agents.....	4,451
Number of letters written.....	6,000
Number of miles traveled.....	186,245

Farmers' Institutes, Short Courses

Notwithstanding that the appropriation for Farmers' Institutes was discontinued by the last Legislature, the demand for one or two day meetings, movable schools and short courses has greatly increased

during the past two years. It was necessary for the Extension Service to carry on this work, and the meetings furnished an excellent opportunity to present various matters of importance to the farmers of the State.

Community Exhibits

The policy inaugurated by the Maryland Agricultural Society during the war period of encouraging community exhibits has proved to be of great value in arousing public spirit in the rural communities. One hundred dollars was appropriated by the Society to each county to be offered as awards for agricultural exhibits. A large number of splendid exhibitions have been held in various sections of the State. The County Agents and Specialists of the Service assisted in the conduct of these exhibits.

Inter-Church World Movement

The Extension Service is cooperating with the Inter-Church World Movement in making a rural church survey of the State. The Rev. Charles F. Scofield, State Supervisor, has his headquarters with the Extension Service, and every possible cooperation is extended in this valuable work.

Conclusion

It was only possible to touch on the many phases of Extension work in progress in this report. The work of the Extension Service was all-important in war, and is equally important in peace. The promotion of agriculture requires vigorous leadership in every county and in every community. It is the duty of the Extension Service to convey the results of applied science relating to agriculture and home economics to the farmers and home makers, and to all people generally. In order to maintain agriculture during the coming peace on the plane it rightfully deserves to occupy, the farming industry in a large number of sections and individual instances must be modernized. It will be our province to sound the clarion note and demonstrate the applied fact in accomplishing this end.

Not the least of our obligations is to the younger generation. We should see to it that the farm boys and girls are given every possible opportunity for advanced education in agricultural science.

We must extend our general extension activities—that is, in rendering service to the great body of urban and city population who desire assistance and information in subjects other than agriculture and home economics. There is a large field in lecture work, supplying educational films, correspondence courses, and similar activities that we must meet in order to render the greatest service to the people of the State. While much has been accomplished, the future for Extension work in Maryland presents wonderful possibilities.

A large amount of public funds, both Federal and State, is devoted to the support of this class of work in Maryland. Our responsibility increases in proportion to our opportunity to serve the people of the

State. Careful attention is given to the principles governing the expenditure of public funds, which must be more circumspect from the standpoint of wise and economical expenditure, based upon definite results, than in the use of private funds.

Finally, I cannot refrain from again expressing my sincere appreciation of the splendid support and cordial cooperation of every member of the Service, including our clerical force, in rendering every possible assistance during the past emergency period.

I am especially indebted to President Woods and the officials of the States Relations Service for their cordial and earnest support and assistance in directing the work of the Extension Service.

REPORT ON THE AGRICULTURAL WORK CONDUCTED UNDER THE AUSPICES OF THE MARYLAND COUNCIL OF DEFENSE

IN COOPERATION WITH EXTENSION SERVICE, MARYLAND STATE COLLEGE

This Report will record a summary of the initial movements, developments and results of emergency agricultural work conducted during the war period by the Maryland Council of Defense in cooperation with State and Federal agencies.

It was not until early in the year 1917 that the general public, or even many State and Government agencies, realized to the fullest extent the demands that would be made upon this country for food products. War among the nations of Europe had continued since July, 1914. A constant drain upon the food resources of the world had not only exhausted all surplus, but finances and facilities for production in many European countries had been greatly depleted. The demands of European peoples during the winter of 1916-1917 had so reduced the supply of food products in this country that with the approach of the 1917 season a panicky feeling existed, so great was the demand for seeds and that all available land be devoted to the production of food products. By this time, it had become inevitable that this Nation would become affiliated with the Allies against the common enemy in the defense of justice, humanity, and civilization. Immediate steps were taken by the State College and United States Department of Agriculture to make hurried surveys of available seed supplies. In fact, prior to this period, these agencies had been making every effort toward increasing production and the conservation of food. With the declaration of a state of war between the United States and the Central Empires, April 6, 1917, our people recognized more fully than ever before the absolute dependence of this Nation and those associated with us in the prosecution of the

war upon an adequate supply of food products. Accordingly, special State and Federal agencies were created to augment the regular agencies in the stimulation of production and conservation of food.

Maryland Preparedness and Survey Commission

The State had recognized the necessity of providing a semi-official body of public-spirited citizens to look into various means of adequate preparedness for any eventuality. The Maryland Preparedness Commission was appointed in the fall of 1916 by Governor Harrington. This Commission was headed by Gen. Carl R. Gray, who was also a member of the State Board of Agriculture. Shortly after the declaration of war, a joint conference of the members of the Executive Committee of the State Commission and the members of the State Board of Agriculture was called, April 12, 1917, to consider the agricultural situation. The result of the labor and seed surveys conducted by the Extension Service of the State College was presented to the conference by the President and Directors. A private fund was established, with the aid of the Governor, State Treasurer and the State Board of Agriculture, to which public-spirited citizens subscribed for the purpose of securing agricultural seeds in large quantities, to be distributed to farmers at cost, upon a nine months' credit. The Director of the Extension Service of the State College was authorized to secure contributions to the fund, and charged with details of purchasing and distributing the various kinds of seeds.

Governor Tours State

Realizing the necessity of educating the people of the State to a thorough realization of the State's responsibility and the need for increased production of farm crops, with the concurrence of Governor Harrington, the Director of the Extension Service of the State College through the County Agency force arranged for mass-meetings of farmers in the county-seats of all counties, which were addressed by Gov. E. C. Harrington, T. B. Symons, Director of Extension, and Prof. C. S. Richardson, representing the College.

This campaign served a most useful purpose, not only in emphasizing the necessity for the utilization of all available land for agricultural food crops, but also to arouse a most patriotic effort from the farmers to produce increased crops, in spite of great scarcity of farm labor, which had been gradually leaving the rural sections to engage in more remunerative work in the munition factories.

Every possible preliminary step was taken by the College during this period to encourage greater production and more extended cultivation of farm crops, and the raising of live stock to meet the increasing demands of the war.

An extra session of the Maryland Legislature was called by the Governor, and the Maryland Preparedness and Survey Commission was designated by State enactment as the Maryland Council of De-

fense and supplied with necessary funds to prosecute such emergency work as was deemed necessary.

With the formal organization of the State Council of Defense. July 11, 1917, the Agricultural Committee of the Council was formed under the chairmanship of Dr. A. F. Woods, President of the State College and Executive Officer of the State Board of Agriculture. Dr. Woods was thus in position to correlate all phases of agricultural work, so as to prevent duplication and secure the greatest unanimity of effort. A complete program and budget was presented to the Council through this committee to supplement the regular agencies already at work. The emergency funds were available August 1, 1917. For convenience, it is deemed best to give a summary of the work conducted during the seasons of 1917 and 1918.

General Assistance to State College

The leadership of the State College of Agriculture was at once recognized to guide the efforts of all forces thrust into the arena for increasing our agricultural output, and the Extension Division was the natural agency of the College through which the greater part of this effort was carried to the farmers of the State.

The Extension Service was fortunate in having a good organization of workers, with a county man and woman agent, having a working organization in every county of the State. It was, therefore, desirable to make this organization as efficient as possible by providing ample facilities and supplementing the force where necessary.

On account of the great amount of emergency work that was thrust upon the County Agents, it was necessary to aid them in defraying additional traveling expenses, to furnish some assistants, and to give them clerical help for their offices. An allowance per month was made for each for three months, beginning July 15. This assistance by the Council of Defense was of inestimable value in increasing the efficiency of the County Agent force.

Seed Distribution

There was a large demand on the part of farmers for potatoes, cow peas, soy beans, etc., which were not available in this State. These seeds were purchased in carloads from other sections and distributed in small lots throughout the State. Where credit was desired, the farmers' personal notes were taken.

The initial fund was not sufficient to finance the project, as nearly \$20,000 worth of seed was purchased. The Council of Defense contributed through the agricultural committee \$4,000, and placed this contribution upon the same basis as that loaned by private contributors. The project was a great success in assisting those needing seed to obtain it, and the large amount of food produced from the \$20,000 worth of seed distributed can only be conjectured.

The Farm-Labor Problem

Early in the spring of 1917 the farm-labor problem became very acute. Farmers hesitated to plant large acreage to crops for fear of an inadequate supply of farm labor at harvesting. The demands of the munition factories with greater remuneration and the calls of the Army and Navy drew heavily upon rural districts. In many communities it was thought that there was not sufficient farm labor to start the season's crops. A campaign of education was necessary in order to explain, first, the demands of the Government for men; second, the necessity of utilizing all available farm labor in the community to the greatest advantage, and third, to show the possibilities of cooperation between the local towns and cities and the surrounding rural sections during the harvest period. This educational work was conducted by the Extension Service of the State College in cooperation with the United States Department of Agriculture. The County Agents spent much time throughout the season in mobilizing local labor and in placing labor secured from outside sources.

Farm Labor Bureau

With availability of State Emergency funds, Dr. A. F. Woods, chairman of the agricultural committee, established headquarters for the Farm Labor Bureau in Baltimore, with Mr. Rex E. Willard in charge and Mr. W. M. Hillegeist as assistant. This Bureau was established to serve as a clearing house for assembling available farm labor in the cities and elsewhere, and distributing the same to the sections of the State needing same.

The officials of the Farm Labor Bureau received reports from the County Agents and supplied the demands as far as possible. The work of the Bureau was a success in that it met the need of the period and demonstrated the many difficulties involved in the securing and placing of outside labor. Eight hundred and sixty-five men were placed by the Bureau during the season. In addition, the Bureau assisted the Boys' Working Reserve and other movements for rendering assistance in the emergency. The work of the Bureau continued during the remainder of the 1917 season, cooperating with the County Agents in meeting the fall needs of the farmers.

The special session of the State Legislature passed a compulsory work law that was enforced by the Council of Defense through the County officials. The moral effect of the law was good, and its enforcement in many sections served the purpose of preventing idleness on the part of anyone. The County Agents cooperated in bringing to the attention of the proper officials cases where men were not working six days per week. This law was an important factor in relieving the labor situation in several sections of the State.

Control of Insect Pests

During the early summer of 1917 some unusual outbreaks of insect pests occurred in the State. Through the Agricultural Committee of

the Council of Defense, funds were provided to enable the Extension forces to render assistance in the suppression of these outbreaks and in promoting an educational campaign for the prevention and control of insect pests generally.

Apicultural Work

During 1917 the shortage of sugar was impressed upon the Nation by the Food Administration. It was, therefore, advisable to encourage in every way the production of honey in the State. Definite work was undertaken in eleven counties. Field meetings, demonstrations in handling bees, control of disease, etc., were conducted. As a result of the campaign, a large increase in the honey crop of the State was secured.

Plant-Disease Control

Every effort was made during 1917 to reduce injury from plant diseases. Special demonstrations were conducted in Western Maryland to prevent and control the blight on the late potato crop, which was so important in that section. Similar work was conducted on the Eastern Shore for the control of blight on tomatoes.

The need for conserving wheat in every way made necessary a campaign to prevent stinking smut, a disease that injures this crop in several sections of the State. A campaign was conducted in treating seed wheat with formaldehyde. Four thousand bushels of seed were treated as demonstrations in various sections.

Seed Wheat

With the view of assisting in the distribution of adaptable and greater producing varieties of wheat to many sections of the State, the Extension Service through the Council of Defense funds endeavored to supplement this work which the Experiment Station had been doing upon a small scale for several years. Specialists and County Agents located as much good seed wheat as possible.

Public Tractors

Early in 1917 there was a demand for public tractors in several sections of the State. This was due to labor shortage and the desire of the people to plant all available land to food crops. Funds were not available to give the project a trial, however, until the fall of the same year. The purchasing and operation of public tractors by the State were undertaken with a great deal of hesitancy. It was easy to secure the machines, but the difficulties of operation, securing continuous work, and financing the project presented many obstacles. However, the demand was so insistent that the Council of Defense, through the agricultural committee, authorized Dr. Woods to purchase four tractors and to put them in operation as public machines to test the practicability of the plan. Two machines commenced work Sep-

tember 6. Two others were secured later. The machines were placed under the control of the County Agents in Kent, Cecil and Harford Counties. During the fall of 1917 the four machines did good work, competent operators were secured, and each section reported favorably upon the plan. The tractors served to increase the acreage in winter wheat in those counties.

Milk Cost Survey

The critical conditions surrounding the production of an adequate supply of milk, the difficulties presented in its distribution, the consequent non-agreement between producer and distributor regarding proper remuneration, and finally the reluctance of the consumer to pay an increased price for the product prompted the State Council of Defense to yield to public demands and inaugurate an inquiry into the actual cost of the product.

On November 30, Mr. Carl R. Gray, Chairman of the Maryland Council of Defense, addressed a letter to Dr. A. F. Woods, President, Maryland State College of Agriculture, requesting that he undertake an investigation of the cost of producing milk in Maryland generally, and the cost of distributing it in Baltimore and other Maryland cities.

Immediately upon receipt of the foregoing letter, Dr. Woods conferred with all of the agencies, both State and Federal, having jurisdiction over the matters involved in the proposed investigation. As a result of several conferences, it was finally decided that plans for the Survey should be prepared by the Public Service Commission in co-operation with the Extension Service of the State College.

On November 22 the proposed plans were endorsed by the Chairman of the Council of Defense, and immediate steps were taken to begin the investigation on Monday, November 26. It was fully understood that this Survey was conducted at an abnormal period of the year for the ascertainment of the cost of milk and, therefore, the figures could not safely be applied to any other season. The purpose of the Survey was to ascertain the cost of milk at that particular time. The report issued as a result of this Survey discussed all phases of the milk problem in a comprehensive manner. The report presented several suggestions and recommendations concerning the maintenance of the milk supply, the food value of milk, and the need for an investigation covering an entire year.

Woman's Work

A summary of the emergency agricultural activities during 1917 would not be complete without a generous reference to the wonderfully effective work conducted by the women of the State in the production, and especially the conservation, of food products.

The women's section of the State Council of Defense was completely organized, with a central committee and committees in all counties. These organizations cooperated fully with representatives of the

Extension Service in both city and county. Through the Federal Emergency funds, a woman agent was placed in each county, with several urban workers in our cities. Travel and clerical assistance was given the agents through State Emergency funds.

The agents, in conjunction with the women's section, Council of Defense, public school authorities and all other cooperating agencies, aroused the public to the importance of conservation of food, the growing of war gardens, and the many other problems in home economics that aided home makers to meet war conditions. The patriotic response on the part of the women of the State in all phases of work was an inspiration to the State and Nation.

Summary of 1917 Season

The season of 1917 thus ended with a splendid response on the part of the farmers of Maryland in producing a large increase of food products, notwithstanding the many difficulties encountered. Early in the fall, the National Draft Act became effective and many men were leaving the rural districts to join the National Army. The people were becoming thoroughly impressed with the magnitude of the task before the Nation.

Season of 1918

With the approach of the 1918 crop season, conditions in rural sections had grown more acute. The demands of the Government for men and food became more urgent. Every agency, both State and Federal, redoubled its effort to endeavor to meet the situation. It was a time in the history of our participation in the war that conditions were far from being bright. It was a time that required deliberation, action, and determination of spirit on the part of those charged with responsibility.

Realizing the necessity of a careful analysis of the situation and the presentation of facts to the people, the Extension Service of the State College in cooperation with the United States Department of Agriculture conducted a thorough campaign of education through a series of farmers' institutes and meetings in all the counties of the State. In many counties, as many as ten meetings were held at different community centers. At these meetings speakers presented cold facts as to needs of the Government and pointed out how, even under existing conditions, the farmers could increase their production. In all cases, a generous response was given to the conclusions drawn, and after the campaign an optimistic feeling existed throughout the State, with a determination on the part of the farmers to do their best even under the most trying circumstances.

Organization of Communities

Recognizing the great importance and necessity for cooperative effort among farmers, especially during this period, and the desirability

of arousing community spirit, not only for patriotic purposes but to accomplish the best results, through organized effort, the Extension Service early in 1917 began to emphasize the need for community organizations in all of the counties. The pressure of emergency work upon the County Agents and Specialists prevented pushing the work vigorously, although each agent had an advisory council of farmers and citizens who gave moral support and specific direction to the projects of work in the county. Labor committees were formed, and in several counties the Grange and other organizations cooperated with the Council of Defense committees in the counties where such had been formed. During the winter months the agents placed emphasis upon the organization of rural communities and the formation of county farm councils. Later, in 1918, the National Council of Defense urged the formation of County Councils of Defense, and this plan worked nicely into the project already in progress in this State. As a result of the campaign for organization, several rural communities were organized into active associations, and at the end of 1918 there were more than five hundred community organizations in the State.

Farm-Labor Situation During 1918

The Farm-Labor situation throughout the year was far better during 1918 than in 1917. Not that there were more farm laborers available, but on account of the more thorough appreciation by the farmers and business men that the labor shortage was a community problem and should largely be solved by community effort. The more general use of farm machinery greatly aided the situation. In no case were reports received that crops were sacrificed on account of lack of labor for harvesting. A large increase in acreage of the main food crops, such as corn and wheat, was secured, and as a whole the year proved to be a wonderfully successful one from the standpoint of agriculture.

Boys' Working Reserve

During 1917 the organization of Boys' Working Reserve was started, with a view to assisting the farm-labor problem. In this State little was accomplished through this agency during 1917. With the approach of 1918, a splendid organization was built up under the direction of Mr. Frank B. Cahn, State Federal Director, in cooperation with the State Council of Defense. Aside from the large amount of work done by boys in their respective communities, more than a thousand boys were sent out to farmers from the Baltimore headquarters to assist in various farm operations. The Boys' Working Reserve was an important contributing factor toward helping the farm-labor problem during 1918.

The Women's Land Army

The response of the women of the State in all war activities will ever be an inspiration and triumph for the sex. Naturally, in their

ambition to meet the needs of the time, there was a sincere desire to aid in the production of food. The serious need for farm laborers prompted a national organization, with State associations to lend such assistance as was possible. Representatives of the Women's Land Army engaged in agricultural work in some parts of the State with success. This movement did not grow to large proportions in this State, as there was not extreme need for it.

Seed Corn Testing Week

On account of the severity of the 1917 winter, much seed corn was injured. In order to direct attention to the importance of testing seed corn before planting, a special campaign advertised as "Seed Corn Testing Week" was inaugurated throughout the State. The Governor of the State issued a proclamation urging all farmers to test their seed corn. The County Agents conducted demonstrations throughout their counties, showing the need and plan of conducting the test. In many instances, seed corn showed only a 50 per cent. germination test. Splendid results were obtained from the campaign, not only in insuring a good stand but in saving labor of replanting.

Economic Survey

An Economic Survey of the farms of the State was undertaken at the request of the United States Department of Agriculture, and was conducted by the Extension Service in cooperation with the public school authorities. This Survey was conducted during January, 1918, with a view to ascertaining as far as possible the needs of the farmers for seed, labor, live stock, etc.

Sheep Campaign

Owing to the great demand for wool and meat products and the adaptability of this State to the raising of sheep, a special effort was made early in 1918 to largely increase this industry in the State. The passage of a law by the State Legislature for the licensing of dogs was an added reason to arouse public opinion to its proper enforcement, as the dog nuisance had been a determining factor in reducing this industry. A State-wide sheep growers' association was formed. Good results have been secured in the enforcement of the State-wide dog law. As a result of this work, much interest has been manifested in the development of this industry in the State.

Threshing-Machine Inspection

In order to conserve our wheat, a campaign was inaugurated in cooperation with the Food Administration to prevent waste during the threshing operation. Six hundred and forty threshing machines were inspected in the State and the owners advised concerning the operation of the machines and the conservation of grain. It is estimated that, as a result of this work, at least fifty thousand bushels of wheat have been saved for marketing purposes.

Rat-Extermination Campaign

With the view of reducing injury from rats on the farm, in the summer and fall of 1918 an assistant was employed from Emergency funds to conduct demonstrations in catching these rodents. The work was started in Talbot County. On 13 farms 425 rats were caught. The highest catch was 108 rats to a farm. On a basis of even 10 rats to a farm, the estimated annual injury to Talbot County was about \$70,000. Estimated on this basis, rats cause an annual loss to this State of about \$1,500,000. The campaign for rat extermination was carried to other counties.

Control of Insect Pests and Plant Diseases

A special outbreak of plant aphid occurred during the summer of 1918 on potatoes and tomatoes. A strange outbreak of grasshoppers occurred in Baltimore and Frederick Counties. Control methods were demonstrated to the farmers to prevent extended injury in each case. An extensive campaign was carried on to prevent loss from various injurious insects.

Special work was conducted in the spraying of tomatoes and potatoes for blight. A large quantity of wilt-resistant seed was saved and distributed to farmers. More than 1,000 acres of tomatoes were planted to wilt-resistant seed. Approximately 6,000 bushels of seed wheat were treated for smut. Council of Defense funds greatly assisted in expanding the regular work under way.

Public Tractors 1918

The apparent success of the State tractors in the fall of 1917, with the insistent demand of the farmers for more equipment of this kind, led the State Council of Defense to purchase five additional machines with full equipment.

More than 1,500 acres were plowed and disked by the nine State tractors. This acreage would in all probability have remained fallow had it not been for the service rendered by the State-owned machines; consequently, the crops raised from this amount of land was a valuable contribution to the efforts of the Maryland farmers to raise more foodstuffs.

Not only were the crop yields increased in this State by using these machines, but the farmers could see that the use of tractors would be exceedingly helpful on the farms. This undoubtedly contributed to the fact that over 50 per cent. of the tractors in Maryland were purchased in 1918. Probably the greatest good from the operation of the State tractors was the demonstration to the farmers of the practical use of these machines for farm operations.

Home Garden Work

During 1917 splendid progress was made in the encouragement of war gardens, in both country and cities. Everyone who possessed a

small piece of land engaged in the production of vegetables for the home.

The work was not thoroughly organized, however, until the spring of 1918. The Food Production Committees of the women's section, Council of Defense, rendered valuable assistance in all sections of the State in arousing public interest in the garden movement. The imperative need for greater food production during the season of 1918 brought into prominent relief the potential possibilities of the home garden. With the desire to stimulate production, the State Food Administration, through Mr. Edwin G. Baetger, organized a \$25,000 Win-the-War-Product contest, with \$12,600 of this amount designated as garden prizes.

These prizes served as a wonderful stimulant to the promotion of war gardens. The average return per acre from the small gardens was \$827.64, and for the large gardens \$546.92. The estimated number of war gardens conducted under the auspices of the cooperating organizations in the counties and Baltimore City was 170,040. The estimated value of food produced from the gardens reached the enormous sum of \$6,880,900.

Second Milk Cost Survey

In order to ascertain the cost of milk production during the summer period, especially at the time when pastures are usually dry, a second Milk Cost Survey was conducted by the Extension Service for the week of August 19 to 25, 1918. A report was issued giving the results of the Survey. The same limitations applied to this Survey as the first, but this additional data for this period of the year was valuable in showing variations due to seasonal changes.

Women's Work in 1918

The Home Economics work was especially successful throughout the State during the season of 1918. The Food Administration, the women's section of the Council of Defense, and all other agencies cooperated with the Extension Service representatives in promoting the production and conservation of food. More than forty agents were employed in the counties and urban work. Effective organizations were perfected in all sections for pushing the canning, drying, and preserving of home products. Community kitchens were established at various places in the State by the cooperating agencies. These kitchens were used as centers where canning and drying were done under the supervision of the county home demonstration agents. It is impossible to estimate the total amount of canned and preserved food that was put up by the Maryland women. Certainly never in the history of the State had so much food been preserved. A good season had given a bountiful return and a very little food was wasted. An everlasting tribute can be paid to the home makers of the State for the manner in which they responded to the needs of the Nation.

Boys' and Girls' Club Work

Three thousand boys and twenty-five hundred girls enrolled in the Boys' and Girls' Club work during 1918. Some of the Emergency funds assisted in expanding this great work. Boys and girls were a mighty factor in many war activities, and they did their share in the production and conservation of food.

Negro Work

All phases of work here reported were taken up with our colored people. Colored emergency agents were appointed to aid the colored farmers and home demonstration agents to assist the women in the canning and drying of food products. Splendid cooperation was secured from the colored people in all parts of the State. It is felt that much permanent good has been done in teaching the colored people to raise gardens and to provide for a distant day. Defense funds assisted in extending this work, which was in progress by the Extension Service.

Liberty Loans and Savings Stamps, Red Cross and Similar Activities

The members of the Extension force and Emergency Agents contributed largely in service in their respective communities to the success of the Liberty Loan campaigns, War Savings Stamps drive, and Red Cross work.

Maryland State College

This summarized report deals mainly with the field work in agriculture conducted by our division of the institution, the Extension Service, in cooperation with the agricultural committee of the State Council of Defense.

It does not even attempt to cover the work of the Extension Service in cooperation with the United States Department of Agriculture during the war period, but only to point out the special lines of work undertaken and those which were expanded through the financial assistance rendered by the State Council of Defense. Aside from what is here reported, the State College through its resident instruction and research division contributed largely to the success of Maryland's participation in the war.

The Maryland Agricultural Society

The Maryland Agricultural Society, with its affiliated associations, including the Maryland Horticultural Society, Maryland Crop Improvement Association, Maryland Dairymen's Association, Maryland Bookkeepers' Association, Maryland Sheep Growers' Association, Maryland Vegetable Growers' Association, cooperated to the fullest extent with all State agencies for the successful prosecution of the war. As representing the organized farmers of the State, the moral support in putting on campaigns for increased production, handling the labor problem, etc., was most helpful. The Society aided in developing community exhibits instead of holding its annual State exhibit.

The State Grange

Splendid cooperation was received from this farmers' organization in the State. The local Granges contributed largely toward developing community spirit and in holding agricultural exhibits. The meetings of the Grange in various sections furnished an opportunity to present to the members definite projects for carrying out the war program.

Conclusion

The outstanding feature in the prosecution of Maryland's Agricultural War Program was the generous and patriotic response of the farmers and home makers of the State. While at times presented with almost unsurmountable difficulties, the farmers always met the issue and responded with an increased production of food crops. The sacrifice and willingness to do their utmost under the trying circumstances will ever redound to the credit of the Maryland farmers, in company with the farmers of the Nation during the war period. The same must be said of the farm women, not only in the pursuit of their usual vocation in the home, but also in the assistance they rendered in the fields. Fortunately for this State, the warmest cooperation existed throughout the war period among all official agencies having relations with the agricultural work.

The appointment of Dr. A. F. Woods, President of the State College and Executive Officer of the State Board of Agriculture, as Chairman of the Agricultural Committee of the Council of Defense provided for unified direction of all fields of effort in the production program.

Maryland's agricultural status comes out of the war in a much stronger position than before that period. The farmers have learned many lessons in more efficient farming. Our live stock has increased, especially hogs and sheep, and while our food crops were increased, our rotations have not been seriously interfered with. Our increases have been regular. Emphasis has been placed upon yields per acre, rather than acreage alone, and as a result, our farmers are in a better position to face the future, whatever there may be in store for agriculture. The representatives of the Extension Service of the State College are deeply grateful to the people of the State for the earnest cooperation given at all times, for responding generously to our suggestions, and for permitting the Extension and Emergency forces to render a greater service to them than ever before.

We are especially grateful to the State Council of Defense for the cordial support and financial assistance rendered through President Woods, which permitted the successful prosecution of the work outlined in this Report.

STATE HORTICULTURAL DEPARTMENT

Extension Service, Maryland State College of Agriculture

The control of injurious insect pests and plant diseases is always a vital problem in the protection and development of the agricultural and horticultural industries of the State. Many old pests continue to exact their annual toll and many new pests are constantly threatening our major crops. There are many problems in insect and plant disease control that should be further investigated, so as to evolve practical methods of control. The fruit interests of the State are making splendid progress, and every means should be taken to encourage the development of the orchard, small fruit and vegetable industries, as the State is especially adapted to the raising of these crops.

The work of the Department is conducted by the State Entomologist, E. N. Cory, and the State Pathologist, C. E. Temple, under the general supervision of the Extension Service. W. C. Travers acts as nursery inspector and general assistant; G. H. Cale, Assistant in Apiculture, resigned to accept a position with the United States Department of Agriculture. C. B. Nickels acts as fellowship assistant. Temporary assistants have been employed to aid in the special tomato-spraying investigations.

Lack of funds has prevented securing proper assistance to both the Entomologist and Pathologist. The activities of the Department cover both inspection and regulatory work, as well as demonstration and extension work. The various features of the work of the Department can best be discussed under the following heads:

Nursery Inspection

Forty-five nurseries were inspected by the officers of the Department during 1918-1919 and fifty-one nurseries have been inspected for the year 1919-1920. Their general condition was found to be excellent. Especial attention was directed to the examination of the stock for the presence of the Oriental peach moth (*Laspeyresia molesta*). This pest was located in two nurseries. The quarantine against the movement of stock from infested areas to non-infested areas within the State was instituted by a proclamation of the Governor, with the view of protecting our non-infested areas from invasion by this pest and to relieve the non-infested areas from the quarantine measures of other States.

The presence or absence of the Oriental peach moth (*Laspeyresia molesta*) was rather fully determined by the inspectors of the Federal Horticultural Board working in cooperation with the various State Entomologists of all of the peach-growing States of the Union. The nurseries, with the exception of the strawberry nurserymen, who ship only once a year, are inspected every six months as provided for in the State law.

Imported Stock.—A total number of 163,400 plants, or 241 cases, of imported stock were imported from February, 1918, to February, 1919. Since February, 1919, up to the present time 178,619 plants, or 190 cases, of stock have been imported. Considerable stock was received from abroad up to July, 1919, when the Federal quarantine, No. 37, prohibiting the entry of most classes of foreign stock went into effect.

Orchard Inspection

All of the staff have been frequently requested to make personal inspections of various orchards. Inspections have been made for yellows and other diseases, upon request from growers. Scouting trips have been made through the principal fruit sections of the State to keep in touch with the development and spread of diseases. Brown rot in stone fruits caused in many cases a complete loss.

Demonstration Work

The demonstration and extension work conducted by the officers of the Department is done in conjunction with the County Agents. The officers serve as Specialists in the control of insects and plant diseases.

Control of Strawberry Weevil.—This pest of the strawberry has caused severe losses and in some sections, such as in Anne Arundel County and parts of the Eastern Shore, the growers were abandoning the crop on account of the ravages of this insect. During the past season splendid results have been secured in the dusting of the strawberry plants with sulphur and arsenate of lead. Strawberries dusted three times with a mixture of 85 per cent. sulphur and 15 per cent. arsenate of lead showed a net profit of \$163.50 per acre over the checks not treated. In 1919 strawberry dusting, which was carried on in four counties, has amounted to an estimated increase to the farmers of \$70,250. The figures from Caroline and Wicomico Counties have been received, showing that there is an increase of \$18,250 in Caroline County and \$17,000 in Wicomico County. The figures from Somerset and Worcester Counties have not been received, but a conservative estimate places them at \$20,000 in Somerset County and \$15,000 in Worcester County. In Caroline County 146 acres were dusted, showing an average increase of 500 quarts per acre over those that were not dusted. Now, on this basis, 146 acres with an increase of 500 quarts per acre yield 73,000 quarts, which sold at an average price of 25 cents per quart.

Peach and Apple Spraying.—While it is impossible to separate economically the work in the control of insects from that of plant diseases in orchards, it was with the primary object of controlling insects that Mr. Travers, in cooperation with the County Agents, undertook demonstrations at a number of orchards on the Eastern

Shore during the past year. It is interesting to note that this work was conducted in large and small orchards with equal success. In a back-yard at Easton three trees that had previously borne no salable or scarcely eatable fruit during their life were sprayed three times, with the result that in addition to having fruit enough for the home the owner was able to sell approximately \$45 worth of peaches.

In the larger orchards equal success attended Mr. Travers' efforts, culminating in the making of a *curculio* free crop on 992 trees that showed a net profit of \$11,875.83. Of course, the high price of fruit influenced the profits that are given, but the important point still remains that our Specialists and Agents were able to demonstrate to these growers and those who visited the plots that the *curculio* and the codling moth, together with the peach and apple diseases, can be controlled profitably.

Results of the Demonstration for the Control of Insects and Diseases of the Peach

<i>Number Trees.</i>	<i>Number Applications.</i>	<i>Cost.</i>	<i>Number Baskets.</i>	<i>Cash returns less cost of spraying.</i>
3	3	\$ 2.06	29	\$ 45.69
1,500	4	481.50	8,536	9,732.80
1,500	4	218.62	2,800	2,174.57
1,450	4	114.74	2,000	1,752.66
3,000	4	437.24	3,500	4,127.82
300	4	100.00	435	422.50
1,000	4	365.17	8,314	11,875.83
<hr/> 8,753	<hr/> 27	<hr/> \$1,719.33	<hr/> 25,614	<hr/> \$30,131.87

The saving to the farmers on peaches and apples this year will amount to a total of \$125,000 on peaches alone, and approximately \$75,000 on apples, making a total for the three crops of \$270,250. This is a very conservative estimate of the money returns which will accrue to the farmers who have followed our directions in the matter of spraying their trees and plants to control such pests as the strawberry weevil from the *curculio* and codling moth, and diseases which are controlled at the same time, such as brown rot of peaches.

At this time it is too early to get the figures for the orchard work, but it may be said that in one large orchard which produced more than 200 cars of peaches this year more than 90 per cent. of the blossoms were lost by brown rot on the unsprayed check trees, where only 12 per cent. were lost on the sprayed and dusted trees. At the end of the season in this orchard there was a difference of more than 66 per cent. in the amount of fruit on the sprayed and dusted trees, as compared with the untreated trees, in addition to the decided difference in quality. The figures for this demonstration work will not be available until the middle of November, when they will be published in bulletin form.

Potato Spraying.—Special demonstration work has been carried on in Garrett and Allegany Counties for the control of late blight on potatoes. Ten demonstrations in different sections gave good results.

Seed Potatoes.—The results of developing seed potatoes in this section have been highly successful. Ten thousand bushels of certified seed have been produced in that section during the past year. The potato fields were given two inspections and certain lots storage inspection. Professor Temple has devoted much time toward developing this potato seed industry.

Tomato Wilt.—Hundreds of demonstrations in the control of tomato wilt by the growing of wilt-resistant seed have been successful. Seventy-four pounds of seed of wilt-resistant varieties were used in the demonstration work conducted in cooperation with the United States Department of Agriculture. Professor Temple reports that whenever plants from these wilt-resistant varieties are matched against those from commercial seed on wilt-sick soil, there is a very marked increase in yield in favor of the wilt resistant.

Rat Control.—In order to obtain data upon which later campaigns may be based, Mr. C. J. Pierson, operating under funds from the Council of Defense and directed by the Entomologist, conducted a campaign of killing rats in Talbot County, in which 13 demonstrations were made, with the result that 425 rats were captured in one month. As many as 108 rats were captured on a single farm. At the rate of \$3 per rat, the total amount saved to the farmers of Talbot County was \$1,375. Even should we deduct from this amount Mr. Pierson's salary and expenses, together with the total cost of the rat traps, which still are in good shape and available for use, the net profits to the farmers of Talbot County for this work amount to at least \$1,000. This work should be continued and amplified another year.

Investigational Work

The main insect project pursued under State Horticultural Funds has been the control of the woolly aphis. The results indicate that this pest can be controlled by the application of pine-tar creosote in 8 per cent. emulsion twice a year. A special bulletin will be issued on this investigation by the Experiment Station.

Investigations of the comparative value of dusting and spraying of fruit trees have been pursued for two years, both in Western Maryland and Eastern Shore orchards. These results will be published this winter. Briefly, dusting has failed to control the insects and diseases of peaches as well this year as spraying. The control of insects on apples has been up to the usual standard in our large commercial orchards. As an adjunct to spraying the dusting should prove most helpful, but as a sole agency for the production of high-class fruit it cannot be relied upon to give results.

Control of Leaf Blight on Tomatoes.—A large amount of work has been conducted during the past two years in testing various spray mixtures for the control of this disease which affects this crop so seriously in the State. About 50 acres of tomatoes divided into three and six row plots and sprayed or dusted with different materials were used in these experiments. These spraying operations have been mainly conducted at Hurlock. A special report on this experiment will be published this winter. Four acres of wilt-sick soil are used at Hurlock as a breeding plot to develop other wilt-resistant varieties and to improve the present ones.

Control of Root Rot on Peas.—Unusual injury has been caused by a root disease of canning-house peas. Selections were made from thirty fields in 1918 and planted on sick soil in 1919 with very promising results. This presents an important problem in the maintenance of our pea industry.

There are many other problems in plant-disease attack that should be given careful investigation.

Surveys

Potato Wart Disease.—In 1918 the dreaded wart disease of the potato was discovered in Pennsylvania, and since then it has been found in West Virginia. Every effort has been made, in cooperation with the United States Department of Agriculture, to make a careful survey of gardens, fields and dealers' stocks to determine whether or not the disease is present in Maryland. The survey has been made in every county. A publicity campaign including descriptive charts on the disease has been carried on. Ninety-two newspapers have carried the articles and twelve thousand cards describing and illustrating the disease have been distributed. We must watch for the first appearance of this dreaded disease in this important crop.

Surveys have also been made for the appearance of the diseases "take all," flag smut and neuratode of wheat, with negative results thus far.

European Corn Borer.—This important pest has established itself in Massachusetts and New York. The insect is considered to be the most destructive pest ever introduced into this country. In Massachusetts the pest has spread from 300 square miles last season to 1,200 square miles this season. In New York about 400 square miles are infested. Every means is being taken by those States, in cooperation with the Federal authorities, to exterminate the pest if possible. New York State has spent \$100,000 in fighting the insect, and Congress is asked for an appropriation of \$2,000,000 to exterminate or control the insect.

A careful watch for the first appearance of the insect in this State is being made. The insect attacks corn, and if it should spread to our corn-growing sections it is impossible to estimate the damage that it will cause in this country.

Apiculture

The Entomologist, as Secretary and Treasurer of the State Bee Keepers' Association, has endeavored to create an active interest throughout the State in this industry and to bind together the men interested in it into a closer organization. Two successful field meetings have been held. Arrangements have been perfected for the buying of more than \$2,000 worth of supplies on a cooperative basis. The bee keepers are anxious to have a regular inspection of all apiaries in the State made annually and a specialist to devote his time to the development of the industry.

Miscellaneous Work

The officers of the Department have attended many meetings of farmers, assisted in farmers' institutes, short courses and field meetings. Four bulletins have been prepared by the Entomologist and several papers have been presented at State and National meetings by the representatives of the Department. The regular College work has been conducted and a large amount of correspondence and identification of specimens has been given proper attention.

Conclusion and Recommendation

The present budget of the State Horticultural Department will not meet present needs. No increase has been made in this appropriation for the past fifteen years. The work has steadily grown. We are face to face with many new problems in insect and plant-disease control. Increased demands for salary, travel and supplies make necessary a substantial increase in the State appropriation if the work of the Department is to cope with present conditions. It is demonstrated in this report the money returns that will accrue to growers practicing modern methods of insect and plant-disease control. The State cannot make a better investment than in properly providing against the annual toll by these pests and the investigation of combating new pests that appear. An assistant is badly needed in each division of the work and an especially trained bee keeper is desired to aid the apicultural industry. I respectfully recommend that an annual appropriation of \$19,000 be given this Department during the next two years.

The Agricultural Experiment Station

H. J. PATTERSON, *Director*

Some idea of the scope of the work of the Experiment Station may be gained by knowing that there are eighteen men devoting most of their time to the investigations under way and four others who give a portion of their time to investigations.

The subjects under consideration include all of the principal crops and animals which are raised on Maryland farms.

In planning the work due attention is given to those things which are most in need of help and which represent the largest interests.

The work of the Station reaches all parts of the State and some tests are located in almost every county. A detailed statement of the work in progress is given in the thirty-second annual report of the Station.

Publications

The results of the investigations conducted by the Station are published in bulletin form. The bulletins are issued at irregular intervals, or whenever the results are completed or have progressed far enough to be of value or interest to the public. Usually eight or ten bulletins are issued each year.

The bulletins are sent free to all farmers in Maryland who desire them. There are about twenty thousand names on the Station's general mailing list. In addition to the general list the Station has lists of farmers engaged in growing specific crops, so as to be able to communicate or send them information on special subjects.

The following bulletins were issued during this fiscal year:

				<i>Number pages.</i>
1918.	<i>Number.</i>	<i>Subject.</i>	<i>Author.</i>	
Aug.	219	The Revised Agricultural Seed Law	C. P. Smith.....	9
Sept.	220	Agricultural Seed Inspected in 1917	C. P. Smith.....	54
Sept.	221	An Accurate Method of Deter- mining Which Hens- Are Laying	Roy H. Waite.....	10
Sept.	222	Experiments with Fertilizers on Greenhouse Crops.....	Thomas H. White....	28

1918. Number.	Subject.	Author.	Number pages.
Oct. 223	A Comparison of Several Species of <i>Leidopyera</i> Infesting Peach and Apple in Maryland, with Additional Notes on the Oriental Peach Moth.....	Philip Garman.....	25
Dec. 224	Seed Inspected in March and April, 1918.....	C. P. Smith.....	29
1919.			
Jan. 225	Fertilizer Experiments with Tobacco	W. W. Garner and D. E. Brown.....	28
Feb. 226	How to Caponize.....	Roy H. Waite.....	9
Mar. 227	Citrus Fruit Rinds as a Hog Feed	R. S. Allen.....	10
June	Thirty-second Annual Report..	H. J. Patterson	

A total of nine bulletins and the annual report, making a volume of 122 pages for the year. In addition to the official bulletins, the members of the Station staff have contributed numerous articles of a popular nature to the agricultural papers and technical articles to scientific journals.

Staff Personnel

E. H. Brinkley, who has been farm superintendent for many years, was given a leave of absence for fourteen months to do special war work for the United States Grain Corporation as inspector of threshing outfits and for the United States Department of Agriculture as labor specialist. At the end of this period he resigned to engage in commercial work.

A. R. Ward, D. V. M., resigned at the end of three months' service to enter commercial work.

E. M. Pickens, D. V. M., of Cornell University, was appointed animal pathologist to succeed A. R. Ward.

Geo. R. Stuntz, B. S., Maryland State College, was appointed assistant agronomist to succeed W. J. Aitcheson, who resigned to engage in farming for himself.

C. P. Smith, seed inspector, resigned to accept a position in commercial work with Wm. G. Scarlett & Co., Baltimore. He was succeeded by the appointment of F. S. Holmes, who was formerly connected with the Station, but who resigned to enter the army at the beginning of the war with Germany.

C. L. Opperman, superintendent of Ridgely Farm, was transferred to the Extension Department, and he was succeeded by Albert White, B. S., a graduate of this College, class of 1914, in the Horticultural Course.

John Paul Jones, of the class of 1918, was appointed an assistant in the Plant Physiology Department.

Location of Station Work

An examination of the program of work in progress shows that in addition to the work carried on at College Park a considerable amount is located in different parts of the State. This has been found desirable in order to obtain the conditions of soil, environment, etc., necessary to solve the problems to best advantage. The location of investigations in different sections of the State and in communities interested in producing the particular crop under consideration not only provides the most satisfactory conditions, but also makes the growers more interested and sympathetic with the results obtained.

The location of investigational work on private farms not only secures the interest of the local communities, but the work is less likely to be interfered with or depredated upon than when located at the home institution on public property. Unfortunately, some people regard the State property public to the extent that all residents of the State may help themselves to the products. This attitude has caused many results to be lost or made worthless.

The policy of distributing investigational work in different parts of the State has been found satisfactory and to have the following advantages:

1. It enables the selection of the most ideal conditions that it is possible to obtain.
2. Enables the elimination of the influence of previous tests that may have been conducted on the same land.
3. Enables the work to be isolated and removed from undesirable influences to as great an extent as possible.
4. Makes it possible to conduct the tests and check up results under a wider range and variety of conditions.
5. Secures the interest and sympathy of the local community and the farmers specially interested in a particular crop.
6. Reduces the liability of loss of results through the depredation on products to a minimum.
7. Relieves the institution of the marketing of products or becoming the competitor of private capital.
8. The work can be conducted as economically as at the central institution.
9. Enables the expansion of the investigational work without owning or investing money in land, teams and equipment. The success of the work, however, will be dependent upon the careful selection of the collaborator and the giving of sufficient supervision at the critical periods.

The Present and Future of Investigational Work

The character and results of the work of the Experiment Station are largely responsible for the present popularity of the College and its various departments with the farmers of the State. As the investigational work of the country developed, agriculture was the given

matter to teach and the subject was reduced to a teachable form, and then the land grant colleges took on the real functions for which they were created. The Experiment Station work made necessary the calling into existence of the Extension Department, which in a large measure is its agency for carrying the results of the investigations out and demonstrating their application to the farmers. The experiment stations, in a measure, have been the munition factories for the other branches of the institutions. The creation of the extension departments relieved the stations of the work and expense of conducting their own demonstrations and doing many things which could not truly be classed as investigations, but at the same time it took the stations out of that intimate personal touch with the farmers which had obtained in the past. This to some extent has been to the disadvantage of the Station, especially in the matter of appropriations for investigational work. The fact that the States are required to make large appropriations in order to offset the Federal funds for extension work has also made it more difficult to get increased amounts for other phases of work, as in the smaller States the amount necessary for the extension departments represented a large increase over the allotment given in institutions in former years by the State Legislatures.

The Experiment Station, in common with most State institutions, has found that the great shrinkage in the purchasing power of the dollar has made it impossible to continue all the work conducted in the past, or to meet the constantly increasing demands made for help, or to take up the many new problems which present themselves from time to time. The circumscribed uses which can be made of appropriations under the present system also make conditions more difficult, as it is not possible to economize to any extent in one direction so as to apply the funds to the channels where they would be of most help or would meet emergencies which arise. The most economical and efficient administration of an institution for research necessitates considerable latitude in the use of appropriations for both maintenance and salaries.

The problem of providing for the decreased purchasing power of the dollar and equalizing salaries of specially trained scientific men, so as to enable them to live and meet the demands made of them, are matters which deserve the serious consideration and prompt action of the Legislature, in order to prevent the decadence of agricultural research and enable the Experiment Station to do the work required and expected properly.

The future of the Experiment Station work depends upon an increase in appropriations to maintain the investigations now in progress and provide additional funds for solving the new problems. The increases in the yields and quality of corn, wheat, potatoes, hay, tobacco and orchard fruits which have been brought about as a result of the Station's work amount annually to more than five million dollars. The amount which the State should appropriate to continue

to maintain the investigational work on the past basis would amount to a commission of only about one per cent. on this annual increase in farm sales that is enjoyed by Maryland farmers.

Soil Work

The soil and fertility investigations have such an intimate bearing upon all other lines of work that it would seem very desirable to expand it at least enough to include all of the principal soil types. The work now being pursued was provided for by an appropriation made by the Legislature of 1912. Instead of spending all the money in one biennium, it was decided to map out a program to cover a period of five or six years. This appropriation is now about expended, and it will be necessary for the Legislature of 1920 to provide for its continuation. Enough should be provided to make it possible to locate field tests on all of the soil types of agricultural importance in the State and locate some work in each county.

The soil surveys are being made in cooperation with the United States Department of Agriculture and the State Geological Survey. It will take about two more summers to complete the survey of the State.

Maryland should take special pride in the soil survey work, as it was first inaugurated in this State and Maryland will probably be the first State to have surveys for every county.

Buildings

The present Station buildings do not provide as much room or as good facilities as are desirable for the work in hand. A new, modern and well-equipped building should be provided for investigational work. The present buildings need painting and considerable repairs. Money must be provided for this purpose, as the present budget allows nothing for repairs. There should also be an appropriation for the insurance on the buildings, unless the State should make some provision to carry its own insurance on all State buildings.

THE EASTERN BRANCH

J. O. SPENCER, *President Morgan College*

THOMAS H. KIAH, *Principal, Eastern Branch*

The Eastern Branch of the Maryland State College is located at Princess Anne. The work is conducted with the cooperation of Morgan College. The Board of Trustees of that College furnish 118 acres of land, with the necessary buildings, numbering 8. The central office and school building was lost by fire during the year, and Morgan

College has appropriated \$30,000 to provide housing and dining hall facilities necessary to take care of the work.

The last session of the Legislature provided for the purchase by the State of additional land, amounting to 79 acres. This is for the most part tile drained and in good condition. The land is provided with a house and barn, and with the cooperation of the Department of Farm Management of the central institution the farm is being developed as a project in the educational work.

Instruction is given in mechanical industry, wood work, printing, blacksmithing, dairying, domestic science and art, general science, mathematics, English, and music. The enrollment for the school year 1918-1919 included 43 boys and 97 girls, a total of 140. There were 11 graduates.

The greatest need at the institution at the present time is for a suitable building for instruction and classroom use, with an assembly hall and laboratories. A small greenhouse should be provided for the study of seed and plant propagation in the winter time. The dairy barn on the farm purchased by the State should be completed, with the necessary live stock. A silo should also be constructed.

The acceptance of the Morrill grants by the State requires the State to provide the necessary facilities for college education in agriculture and mechanic arts. The State has been fortunate in having the cooperation of Morgan College in the past, but the work has not been developed to the extent that the need demands. Morgan College is willing to continue the cooperation under the supervision of the State, and has entered into a contract protecting the interests of the State as the school develops. A great influx of students is certain to take place because of the increasing interest in education—technical, industrial, and scientific—for colored people.

Accounting Department

MAUDE F. MCKENNEY

At the beginning of the period covered by the following report the accounting work of the College, the Experiment Station and the Extension Service was centralized in the business office of the College and a budget system installed. With the helpful cooperation of all departments the system has proved a success and has led to greater efficiency and economy along many lines.

The personnel of the office has been wholly inadequate to the volume of work handled, and while bills have been paid promptly and the work kept up to date at all times, this has been accomplished only as the result of much more overtime work than is reasonable to expect. The vast amount of additional accounting incident to the Radio School and the Students' Army Training Corps was cheerfully carried without extra assistance or compensation. It is now hoped that a liberal appropriation will permit the addition of other trained assistants, so that much valuable data may be put in shape for future reference.

The cash overdraft of \$7,883.87 shown on the College Fund does not include the balance of \$10,000 still due on the loan of \$13,000 made from the Soil Fund during the year 1916-1917. It was expected that this loan would be entirely repaid with the deficiency appropriation granted by the last Legislature, but it was found impossible to do this owing to the unusual expense incident to the war programme. The overdraft on the State Smith-Lever Fund is occasioned by the difference in the State and Federal fiscal years, which makes it necessary to create charges on this offset fund during the months of July, August and September of each year for which no provision has yet been made. An appropriation has been requested for the next bien-nium to obviate this annual overdraft. All other overdrafts are taken care of by cash due or Federal appropriations not yet received.

All Federal accounts included in this report have been audited by the various Federal auditors and the present system unanimously endorsed by them.

**RECAPITULATION OF CASH RECEIPTS AND EXPENDITURES
OF THE MARYLAND STATE COLLEGE OF AGRICULTURE,
EXPERIMENT STATION, AND EXTENSION SERVICE
FOR THE BIENNIUM ENDING SEPTEMBER 30, 1919**

	Expenditures	Receipts	Debit Balance	Credit Balance
College Fund	\$446,809.62	\$438,925.75	*\$7,883.87	
Morrill-Nelson	102,901.40	137,500.04		\$34,598.64
State Board of Agriculture	10,000.00	10,000.00		
State Emergency	44,849.25	44,849.25		
Adams Fund	29,237.58	30,024.55		786.97
Hatch Fund	31,074.05	30,314.33	759.72	
State Fund	52,876.95	52,876.95		
Station Farm	34,475.10	34,239.42	235.68	
Biological Laboratory	33,298.19	37,248.83		3,950.64
Soil Fund	13,338.93	12,923.52	†415.41	
Seed Inspection	14,196.75	14,242.64		45.89
Ridgely Farm	10,088.20	12,982.32		2,894.12
Horticultural Fund—Exp. Station	3.99	3.99		
General Extension	10,973.28	11,839.32		866.04
State Horticultural Dept. ..	16,621.69	16,621.69		
County Demonstration	73,580.25	73,700.25		120.00
Farmers' Institutes	8,349.32	8,349.32		
Federal Smith-Lever	72,078.95	84,197.06		12,118.11
State Smith-Lever	53,910.04	48,168.65	5,741.39	
Federal Smith-Hughes	3,725.28	2,934.76	790.52	
Eastern Branch (State Account)	14,414.19	14,414.19		
Eastern Branch (Federal Account)	21,242.39	24,584.87		3,342.48
Eastern Branch (Special) ..	7,584.21	9,700.00		2,115.79
Filtration Plant	17,323.71	23,000.00		5,676.29
Special Extension Fund	3,479.00	9,683.41		6,204.41
State Dairymen's Ass'n	4,196.07	5,000.00		803.93
Totals	\$1,130,628.39	\$1,188,325.11	\$15,826.59	\$73,523.31

Total Receipts \$1,188,325.11

Total Expenditures 1,130,628.39

Excess of Receipts..... ————— \$57,696.72

Credit Balance \$73,523.31

Debit Balance 15,826.59

‡Net Cash Credit Balance..... ————— \$57,696.72

* Plus \$10,000 due Soil Fund—Loan made in 1917.

† Less \$10,000 due from College Fund.

‡ The Federal fiscal year began July 1, 1919, at which time the annual payment was made on the Morrill-Nelson Fund, the semi-annual payment on the Federal Smith-Lever and Special Extension Funds and the quarterly payments on the Hatch and Adams Funds. Approved projects or other liabilities have been set up against the cash balances shown on these funds, and the balances on the State funds have been entirely used by approved liabilities.

The overdrafts are explained in the paragraph preceding this report.

STATEMENT OF CASH RECEIPTS AND EXPENDITURES OF THE MARYLAND STATE COLLEGE OF
AGRICULTURE, THE EXPERIMENT STATION, AND THE EXTENSION SERVICE FOR
THE BIENNIUM ENDING SEPTEMBER 30, 1919.

	Expendi- tures 1917-18	Expendi- tures 1918-19	Total Expendi- tures Biennium	Receipts 1917-18	Receipts 1918-19	Total Receipts Biennium	Debit Balance
COLLEGE PROPER							
Cash overdraft Sept. 30, 1917.....	\$4,935.12		\$4,935.12				
State Appropriation.....				\$40,000.00	\$92,259.00	\$132,259.00	
Fertilizer Licenses.....				27,388.40	26,057.55	53,445.95	
Student Fees.....				33,377.40	67,353.96	100,731.36	
Domestic Department.....				24,886.09	34,619.30	59,505.39	
General Service.....					19,692.28	19,692.28	
Plant Industry.....					906.27	906.27	
Student Supply Store.....					4,971.62	4,971.62	
Summer School.....					6,029.25	6,029.25	
Interest on Invested Funds.....				4,495.74	3,215.74	7,711.48	
Deficiency in Interest.....				2,047.44	2,047.44	4,094.88	
Interest on Deposits.....				468.75	360.64	829.39	
Miscellaneous Receipts.....				18,711.92	14,816.45	33,528.37	
War Emergency Loan.....					13,000.00	13,000.00	
Transfers from other Departments.....				1,235.94	984.57	2,220.51	

COLLEGE PROPER—Continued.

Expenditures:

Animal Industry.....	1,636.13	\$5,016.14	6,652.27		
Domestic Division.....	39,529.01	60,780.83	100,309.84		
Engineering, Physical Tr. & Military.	5,496.41	13,136.10	18,632.51		
General Science.....	10,190.59	14,475.04	24,665.63		
General Service.....	47,268.40	59,209.52	106,477.92		
Plant Industry.....	10,141.61	13,620.12	23,761.73		
Languages and Literature.....	3,670.51	4,022.19	7,692.70		
Vocational Education.....	3,865.62	8,269.74	12,135.36		
Library.....	1,388.25	2,512.26	3,900.51		
Summer School Instruction.....		1,584.65	1,584.65		
Student Refunds.....	4,432.32	1,645.80	6,078.12		
Executive and Miscellaneous Exp.....	22,718.23	27,298.19	50,016.42		
State Smith-Hughes.....	1,172.95	3,725.27	4,898.22		
War Emergency not in Dept. charges		11,686.58	11,686.58		
War Emergency Construction.....		12,858.37	12,858.37		
War Emergency Loan repaid.....		13,000.00	13,000.00		
Miscellaneous Music and Publications		11,335.05	11,335.05		
Student Supply Store.....		6,621.52	6,621.52		
Fuel.....	8,008.12	9,477.50	17,485.62		
Miscellaneous Transfers.....	1,939.85	141.63	2,081.48		
Cash Overdraft September 30, 1919.....					\$7,883.87

Totals

	\$166,393.12	\$280,416.50	\$416,809.62	\$152,611.68	\$286,314.07	\$438,925.75	\$7,883.87
--	--------------	--------------	--------------	--------------	--------------	--------------	------------

COMMODITY CLASSIFICATION FOR BIENNIUM 1917-1919
COLLEGE PROPER FUND

	1917-18	1918-19	Total
Salaries	\$35,458.46	\$65,745.57	\$101,204.03
Labor	25,920.25	40,607.91	66,528.16
Meats	12,080.64	17,538.95	29,619.59
Groceries	16,296.94	25,088.02	41,384.96
Chemicals and Laboratory Supplies	1,940.88	3,248.09	5,188.97
Stationery and Printing.....	4,863.06	7,543.03	12,406.09
Repairs	5,872.23	28,566.22	34,438.45
Dining Hall Equipment.....	1,426.71	2,409.21	3,835.92
Furniture and Fixtures.....	7,216.23	11,310.88	18,527.11
Tools and Machinery.....	6,933.59	2,580.02	9,513.61
Scientific Apparatus.....	928.82	1,335.05	2,263.87
Traveling Expenses.....	2,150.36	4,111.63	6,261.99
Seeds and Plants.....	253.39	881.67	1,135.06
Postage	876.97	975.18	1,852.15
Freight and Express.....	11,468.29	6,652.44	18,120.73
Gas and Electricity.....	2,038.31	3,274.21	5,312.52
Telephone and Telegraph.....	435.88	883.44	1,319.32
Laundry	128.18	264.43	392.61
Custodial Supplies.....	944.49	803.04	1,747.53
Fuel	*10,414.30	8,799.66	19,213.96
Student Refunds.....	4,372.97	1,645.80	6,018.77
Advertising	47.58	14.58	62.16
Insurance	32.88	7,078.95	7,111.83
Text Books.....	1,085.14	47.57	1,132.71
Music	196.17	392.02	588.19
Uniforms	†2,836.25	.....	2,836.25
Miscellaneous	2,063.65	5,533.23	7,596.88
Library	955.93	1,596.48	2,552.41
Hospital	279.60	122.57	402.17
Trucks, Supplies and Repairs...	.....	6,686.66	6,686.66
Totals.....	\$159,518.15	\$255,736.51	\$415,254.66

* Including gasoline in 1917—carried in truck item in 1918.

† Receipts to cover.

STATEMENT OF CASH RECEIPTS AND EXPENDITURES—Continued.

	Expenditures 1917-18	Expenditures 1918-19	Total Expenditures Biennium	Receipts 1917-18	Receipts 1918-19	Total Receipts Biennium	Debit Balance	Credit Balance
MORRILL-NELSON								
Balance Sept. 30, 1917.....				\$37,500.04		\$37,500.04		
U. S. Appropriation.....				50,000.00	\$50,000.00	100,000.00		
Disbursements:								
College Proper.....	\$38,531.24	\$41,870.16	\$80,401.40					
Eastern Branch.....	10,000.00	12,500.00	22,500.00					
Balance Sept. 30, 1919.....								\$34,598.64
Totals.....	\$48,531.24	\$54,370.16	\$102,901.40	\$87,500.04	\$50,000.00	\$137,500.04		\$34,598.64
STATE BOARD OF AGRL. EXECUTIVE EXPENSES.								
State Appropriation.....				\$5,000.00	\$5,000.00	\$10,000.00		
Disbursements:								
Salaries and Expenses.....	\$4,806.19	\$5,193.81	\$10,000.00					
Totals.....	\$4,806.19	\$5,193.81	\$10,000.00	\$5,000.00	\$5,000.00	\$10,000.00		
STATE EMERGENCY								
Balance Sept. 30, 1917.....				\$7,387.49		\$7,387.49		
Transfer from Seed Account.....				87.60		87.60		
Appropriation from State Council of Defense.....				20,000.00	\$8,500.00	28,500.00		
Sale of Tractors and Tractor Labor.....				694.95	8,179.21	8,874.16		

STATEMENT OF CASH RECEIPTS AND EXPENDITURES—Continued.

	Expendi- tures 1917-18	Expendi- tures 1918-19	Total Expendi- tures Biennium	Receipts 1917-18	Receipts 1918-19	Total Receipts Biennium	Debit Balance	Credit Balance
Disbursements:								
Salaries and Expenses.....	\$29,632.89	\$8,590.74	\$38,223.63					
Balance refunded to Council of Defense.....		\$6,625.62	\$6,625.62					
Totals.....	\$29,632.89	\$15,216.36	\$44,849.25	\$28,170.04	\$16,679.21	\$44,849.25		
ADAMS FUND								
Balance Sept. 30, 1917.....								
U. S. Appropriation.....				\$24.55		\$24.55		
Disbursements:				15,000.00	\$15,000.00	30,000.00		
Salaries and Expenses.....	\$14,664.95	\$14,572.63	\$29,237.58					\$786.97
Balance Sept. 30, 1919.....								
Totals.....	\$14,664.95	\$14,572.63	\$29,237.58	\$15,024.55	\$15,000.00	\$30,024.55		\$786.97
HATCH FUND								
Balance Sept. 30, 1917.....								
Miscellaneous Receipts.....				\$301.62		\$301.62		
U. S. Appropriation.....				12.71		12.71		
Disbursements:				15,000.00	\$15,000.00	30,000.00		
Salaries and Expenses.....	\$14,322.92	\$16,751.13	\$31,074.05					
Balance Sept. 30, 1919.....							\$759.72	
Totals.....	\$14,322.92	\$16,751.13	\$31,074.05	\$15,314.33	\$15,000.00	\$30,314.33		\$759.72

STATE FUND (EXP. STA.)

Balance Sept. 30, 1917.....	\$336.08		\$336.08
Miscellaneous Receipts.....	540.12	\$.75	540.87
State Appropriation.....	25,000.00	27,000.00	52,000.00
Disbursements:			
Salaries and Expenses.....	\$25,862.32	\$27,014.63	\$52,876.95

Totals

\$25,862.32	\$27,014.63	\$52,876.95	\$52,876.95
-------------	-------------	-------------	-------------

STATION FARM ACCOUNT

Balance Sept. 30, 1917.....			
Farm Sales Receipts.....	\$47.52		\$47.52
Interest on Deposits.....	15,678.05	\$17,764.11	33,442.16
Transfers and Miscellaneous.....	462.07	194.66	656.73
	77.01	16.00	93.01

Disbursements:

Wages and Expenses.....			
Balance Sept. 30, 1919.....	\$15,446.32	\$19,028.78	\$34,475.10

\$235.68

Totals

\$15,446.32	\$19,028.78	\$34,475.10	\$16,264.65	\$17,974.77	\$34,239.42	\$235.68
-------------	-------------	-------------	-------------	-------------	-------------	----------

BIOLOGICAL LABORATORY

Balance Sept. 30, 1917.....			
Receipts from Sales.....	\$2,926.40		\$2,926.40
State Appropriation.....	4,594.22	\$19,111.26	23,705.48
	5,000.00	5,600.00	10,600.00

Disbursements:

Salaries and Expenses.....	\$7,577.34	\$25,720.85	\$33,298.19
Credit by Transfer.....		16.95	16.95

\$3,950.64

Totals

\$7,577.34	\$25,720.85	\$33,298.19	\$12,520.62	\$24,728.21	\$37,248.83	\$3,950.64
------------	-------------	-------------	-------------	-------------	-------------	------------

SOIL FUND

Balance Sept. 30, 1917.....			
Payment of Loan to Seed Inspection Fund.....	\$6,908.29		\$6,908.29
Payment in Part of Loan.....	3,000.00		3,000.00
Refund of Freight.....	15.23	\$3,000.00	3,000.00
			15.23

STATEMENT OF CASH RECEIPTS AND EXPENDITURES—Continued.

	Expendi- tures 1917-18	Expendi- tures 1918-19	Total Expendi- tures Biennium	Receipts 1917-18	Receipts 1918-19	Total Receipts Biennium	Debit Balance	Credit Balance
Disbursements:								
Salaries and Expenses.....	\$5,447.90	\$7,891.03	\$13,338.93				\$415.41*	
*Balance Sept. 30, 1919.....								
Totals.....	\$5,447.90	\$7,891.03	\$13,338.93	\$9,923.52	\$3,000.00	\$12,923.52	\$415.41	
SEED INSPECTION								
Balance Sept. 30, 1917.....				\$3,040.89		\$3,040.89		
Miscellaneous Receipts.....				1.75	\$100.00	101.75		
State Appropriation.....				5,000.00	6,100.00	11,100.00		
Disbursements:								
Salaries and Expenses.....	\$7,913.02	\$6,283.73	\$14,196.75					\$45.89
Balance Sept. 30, 1919.....								
Totals.....	\$7,913.02	\$6,283.73	\$14,196.75	\$8,042.64	\$6,200.00	\$14,242.64		\$45.89
RIDGELY FARM								
Balance Sept. 30, 1917.....				\$1,142.25		\$1,142.25		
Miscellaneous Receipts.....				1,061.79	\$778.28	1,840.07		
State Appropriation.....				5,000.00	5,000.00	10,000.00		
Disbursements:								
Salaries and Expenses.....	\$4,854.46	\$5,143.74	\$9,998.20					
Balance State Appropriation unexpended and canceled.....		90.00	90.00					
Balance Sept. 30, 1919.....								\$2,894.12
Totals.....	\$4,854.46	\$5,233.74	\$10,088.20	\$7,204.04	\$5,778.28	\$12,982.32		\$2,894.12

HORTICULTURAL FUND

(Old Balance)

Balance Sept. 30, 1917.....				\$3.18		\$3.18
Miscellaneous Receipts.....				3.81		3.81
Disbursements.....	\$3.99					

Totals.....	\$3.99			\$3.99		\$3.99
-------------	--------	--	--	--------	--	--------

GENERAL EXTENSION

Balance Sept. 30, 1917.....	\$767.15					
Miscellaneous Receipts.....				\$1,169.09	\$190.78	\$1,359.87
Interest on Deposits.....				168.23	251.22	419.45
State Appropriation.....				5,000.00	5,060.00	10,060.00
Disbursements:						
Salaries and Expenses.....	3,729.47	\$6,476.66	10,206.13			
Balance Sept. 30, 1919.....						\$866.04

Totals.....	\$4,496.62	\$6,476.66	\$10,973.28	\$6,337.32	\$5,502.00	\$11,839.32
-------------	------------	------------	-------------	------------	------------	-------------

STATE HORTICULTURAL

DEPARTMENT

Balance Sept. 30, 1917.....				\$62.11		\$62.11
Miscellaneous Receipts.....				556.66	\$2.92	559.58
State Appropriation.....				8,000.00	8,000.00	16,000.00
Disbursements:						
Salaries and Expenses.....	\$8,141.64	\$8,480.05	\$16,621.69			

Totals.....	\$8,141.64	\$8,480.05	\$16,621.69	\$8,618.77	\$8,002.92	\$16,621.69
-------------	------------	------------	-------------	------------	------------	-------------

COUNTY DEMONSTRATION

Balance Sept. 30, 1917.....	\$2,772.93					
Miscellaneous Receipts.....					\$35.00	\$35.00
State Appropriation.....				\$25,665.25	48,000.00	73,665.25

STATEMENT OF CASH RECEIPTS AND EXPENDITURES—Continued.

	Expendi- tures 1917-18	Expendi- tures 1918-19	Total Expendi- tures Biennium	Receipts 1917-18	Receipts 1918-19	Total Receipts Biennium	Debit Balance	Credit Balance
Disbursements:								
Salaries and Expenses.	\$22,753.07	\$48,054.25	\$70,807.32					\$120.00
Balance Sept. 30, 1919.								
Totals.	\$25,526.00	\$48,054.25	\$73,580.25	\$25,665.25	\$48,035.00	\$73,700.25		\$120.00
FARMERS' INSTITUTES								
Balance Sept. 30, 1917.				\$20.04		\$20.04		
Miscellaneous Receipts.				34.98		34.98		
State Appropriation.				6,000.00		6,000.00		
Payment of Loan.				2,294.30		2,294.30		
Disbursements:								
Salaries and Expenses.	\$6,657.68	\$1,691.64	\$8,349.32					
Totals.	\$6,657.68	\$1,691.64	\$8,349.32	\$8,349.32		\$8,349.32		
FEDERAL SMITH-LEVER								
Balance Sept. 30, 1917.				\$7,702.64		\$7,702.64		
Miscellaneous Receipts.				107.56	\$95.00	202.56		
Payment of Loan.				2,064.74		2,064.74		
U. S. Appropriation.				33,885.76	40,341.36	74,227.12		
Disbursements:								
Salaries and Expenses.	\$36,983.67	\$35,095.28	\$72,078.95					\$12,118.11
Balance Sept. 30, 1919.								
Totals.	\$36,983.67	\$35,095.28	\$72,078.95	\$43,760.70	\$40,436.36	\$84,197.06		\$12,118.11

STATE SMITH-LEVER

Balance Sept. 30, 1917	\$3,910.61	\$3,910.61			
Miscellaneous Receipts			\$396.72	\$396.72	
State Appropriation			20,659.00	\$27,112.93	47,771.93
Disbursements:					
Salaries and Expenses	\$21,371.39	\$28,628.04	\$49,999.43		
Balance Sept. 30, 1919					\$5,741.39
Totals	\$25,282.00	\$28,628.04	\$53,910.04	\$27,112.93	\$48,168.65

FEDERAL SMITH-HUGHES

Reimbursement					
Disbursements:				\$2,934.76	\$2,934.76
Salaries and Expenses	\$3,725.28	\$3,725.28			
Balance Sept. 30, 1919					\$790.52
Totals	\$3,725.28	\$3,725.28		\$2,934.76	\$790.52

133

EASTERN BRANCH (STATE ACCOUNT)

State Appropriation			\$6,875.00	\$7,475.27	\$14,350.27
Miscellaneous Receipts			63.19		63.19
Credit by Transfer				.73	.73
Disbursements:					
Salaries and Expenses	\$6,938.19	\$7,476.00	\$14,414.19		
Totals	\$6,938.19	\$7,476.00	\$14,414.19	\$7,476.00	\$14,414.19

EASTERN BRANCH (FEDERAL ACCOUNT)

Balance Sept. 30, 1917			\$1,983.85		\$1,983.85
U. S. Appropriation			10,000.00	\$12,500.00	22,500.00
Miscellaneous Receipts			13.26	87.76	101.02

STATEMENT OF CASH RECEIPTS AND EXPENDITURES—Continued.

	Expendi- tures 1917-18	Expendi- tures 1918-19	Total Expendi- tures Biennium	Receipts 1917-18	Receipts 1918-19	-Total Receipts Biennium	Debit Balance	Credit Balance
Disbursements:								
Salaries and Expenses	\$11,029.46	\$10,212.93	\$21,242.39					\$3,342.48
Balance Sept. 30, 1919								
Totals	\$11,029.46	\$10,212.93	\$21,242.39	\$11,997.11	\$12,587.76	\$24,584.87		\$3,342.48
EASTERN BRANCH (SPECIAL BUILDING FUND)								
Insurance account (loss on barn)					\$9,700.00	\$9,700.00		
Disbursements:								
Balance Sept. 30, 1919		\$7,584.21	\$7,584.21					\$2,115.79
Totals		\$7,584.21	\$7,584.21		\$9,700.00	\$9,700.00		\$2,115.79
FILTRATION PLANT								
Appropriation from Md. State Council of Defense					\$23,000.00	\$23,000.00		
Disbursements:								
Balance Sept. 30, 1919		\$17,323.71	\$17,323.71					\$5,676.29
Totals		\$17,323.71	\$17,323.71		\$23,000.00	\$23,000.00		\$5,676.29
SPECIAL EXTENSION FUND								
U. S. Appropriation (Semi-annual payment)					\$9,683.41	\$9,683.41		

Disbursements:			
Salaries.....	\$3,479.00	\$3,479.00	
Balance Sept. 30, 1919.....			\$6,204.41
Totals.....	\$3,479.00	\$3,479.00	\$9,683.41
STATE DAIRYMEN'S ASS'N.			
State Appropriation.....			\$5,000.00
Disbursements:			
Salaries and Expenses.....	\$4,196.07	\$4,196.07	
Balance Sept. 30, 1919.....			
Totals.....	\$4,196.07	\$4,196.07	\$5,000.00
Grand Totals.....	\$470,511.92	\$660,116.47	\$1,188,325.11

Total Receipts for Biennium.....	\$1,188,325.11
Total Expenditures for Biennium.....	1,130,628.39
Excess of Receipts.....	\$57,696.72
Credit Balance.....	\$73,523.31
Debit Balance.....	15,826.59
Net Credit Balance.....	\$57,696.72

* Plus \$10,000 balance due Soil Fund on Loan made in 1917.

SUMMARY OF CLASSIFICATION OF EXPENDITURES FOR BIENNIUM 1917-18, 1918-19

Commodity	Special Funds	College Proper	Totals
Salaries.....	\$341,953.73	\$101,204.03	\$443,157.76
Labor.....	43,062.05	66,528.16	109,590.21
Publications.....	12,080.10		12,080.10
Postage, Stationery, Telephone and Telegraph.....	8,236.13	15,577.56	23,813.69
Freight and Express (Including Freight on Coal).....	2,788.33	18,120.73	20,909.06
Heat, Light, Water and Power.....	2,291.96	24,526.48	26,818.44
Chemicals and Laboratory Supplies.....	25,606.82	5,188.97	30,795.79
Seeds, Plants and Sundry Supplies.....	10,991.99	8,731.94	19,723.93
Fertilizers.....	2,018.29		2,018.29
Feeding Stuffs.....	11,609.66		11,609.66
Library.....	950.07	2,552.41	3,502.48
Tools, Machinery and Appliances.....	15,762.70	9,513.61	25,276.31
Furniture and Fixtures.....	9,735.42	18,527.11	28,262.53
Scientific Apparatus and Specimens.....	4,612.11	2,263.87	6,875.98
Live Stock.....	1,869.11		1,869.11
Traveling Expenses.....	71,586.89	6,261.99	77,848.88
Contingent Expenses.....	2,776.96		2,776.96
Building and Repairs.....	21,798.38	*34,438.45	56,236.83
Rent.....	3,200.65		3,200.65
Insurance.....	2,779.90	7,111.83	9,891.73
Meats.....		29,619.59	29,619.59
Groceries.....		41,384.96	41,384.96
Dining Hall Equipment.....		3,835.92	3,835.92
Custodial Supplies.....		1,747.53	1,747.53
Laundry Supplies.....		392.61	392.61
Student Refunds.....		6,018.77	6,018.77
Advertising for Help.....		62.16	62.16
Text Books.....		1,132.71	1,132.71
Music.....		588.19	588.19
Uniforms (Covered by Receipts).....		2,836.25	2,836.25
Hospital Supplies.....		402.17	402.17
Trucks, Supplies and Repairs.....		6,686.66	6,686.66
Departmental Transfers:			
College, \$3,273.32.....	Specials, 8,196.43		11,469.75
State Smith-Lever.....			3,725.00
Student Supply Store.....			6,621.52
Old Experiment Station Horticultural Fund.....			3.99
Eastern Branch (Not Classified).....			43,240.79
Payment of War Emergency Loan.....			13,000.00
Transfer to Eastern Branch (U. S. Fund).....			22,500.00
Transfer to Maryland State Council of Defense from State Emergency.....			6,625.62
Overdraft October 1, 1917, College Fund.....			4,935.12
Overdraft October 1, 1917, General Extension.....			767.15
Overdraft October 1, 1917, County Demonstration.....			2,772.93
Overdraft October 1, 1917, State Smith-Lever.....			3,910.61
Balance Canceled on Ridgely Farm.....			90.00
Total Charges Oct. 1, 1917, to Sept. 30, 1919....	\$603,907.68	\$415,254.66	\$1,130,628.39

Total Credits for Biennium.....	\$1,188,325.11
Total Charges for Biennium.....	1,130,628.39

\$57,696.72 Excess of Receipts (See
note on summary page.)

Balance on College Check Register.....	\$31,663.65
Balance on Experiment Station Check Register.....	1,143.20
Balance on Extension Service Check Register.....	14,368.59
Balance on Ridgely Farm Check Register.....	946.45
Balance on Eastern Branch Check Register.....	3,342.48
Cash on Hand, College Fund.....	2,052.68
Cash on Hand, Extension Fund.....	2.51
Cash on Hand, Biological Laboratory Fund.....	2,146.49
Cash on Hand, Farm Fund.....	83.00
Cash on Hand, Ridgely Farm.....	1,947.67

Total Balance Available September 30, 1919..... \$57,696.72

* Including building and alterations for S. A. T. C.

Classified Expenditures of Special Funds for Biennium—1917-1918, 1918-1919

Funds		Amount	Transfers	Salaries	Labor	Publications	Postage and Stationery	Freight and Express	Heat, Light and Water	Chemicals and Laboratory Supplies	Seeds, Plants & Sundry Supplies	Fertilizers	Feeding Stuffs	Library	Tools, Machinery and Appliances	Furniture and Fixtures	Scientific Apparatus and Specimens	Live Stock	Traveling Expenses	Contingent Expenses	Building and Repairs	Rent	Insurance
Morrill-Nelson	1917-1918	\$ 38,531.24		\$ 38,531.24																			
	1918-1919	41,870.16		41,870.16																			
State Board of Agriculture	1917-1918	4,806.19				\$301.55					\$57.49					\$117.60			\$479.55			\$900.00	
	1918-1919	5,193.81		3,400.00			\$59.46				25.00					754.20			430.15			525.00	
State Emergency	1917-1918	29,632.89		9,058.92	\$986.21	197.30	91.97	\$263.25		\$309.62	724.82				\$8,128.78	1.90			9,745.46	\$35.00	\$12.16	47.50	
	1918-1919	8,590.74		2,991.57	425.35			25.38		25.00	1,963.89				845.52	8.00			2,221.45	54.58		30.00	
Hatch Fund	1917-1918	14,322.92	\$40.02	10,400.82	2,482.07	787.82	9.55	14.00		118.78	20.39		\$313.62		21.48	88.60	\$12.12				13.65		
	1918-1919	16,751.13		11,898.32	3,456.56	418.69	21.67	123.53	\$26.94	47.34	192.77			\$27.11	9.72	308.60	215.08			4.80			
Adams Fund	1917-1918	14,664.95	.01	11,696.52	525.58		6.99			920.90	202.56				72.27	494.82	348.59		24.59	16.08	356.04		
	1918-1919	14,572.63		10,395.00	389.52		20.75			893.41	152.73				575.97	570.20	1,405.63		101.68	5.00	62.74		
State Fund (Exp. Station)	1917-1918	25,862.32		9,943.68	1,733.58	1,254.47	482.67	718.58	1,106.62	256.67	1,615.36	\$391.75	4,545.03	456.47	642.19	83.06	101.30	\$159.71	477.23	84.90	1,359.25	449.80	
	1918-1919	27,014.63		9,729.27	4,440.73	2,065.55	544.93	771.17	821.08	204.35	1,186.01		3,852.83	277.44	1,958.34	211.68			493.57	101.30	356.38		
Station Farm	1917-1918	15,446.32			11,882.36		47.10	257.28	209.53	5.72	207.73	56.00	93.00		1,042.68			381.00	772.09	106.78	315.05	70.00	
	1918-1919	19,028.78		1,018.27	9,877.10	6.01		304.94		78.00	462.12	157.75	1,876.25		481.72	11.50		120.00	734.64	90.00	275.58	755.00	
Biological Laboratory	1917-1918	7,577.34		2,355.64	737.21		80.41			2,013.80	115.40		628.13		2.56	15.00	252.18	1,208.40	8.00	79.00	46.61	35.00	
	1918-1919	25,720.85	16.95	3,320.00	984.00		378.73	78.38	13.58	19,491.09	269.24				302.96	253.50	511.17			4.14	97.11		
Soil Fund	1917-1918	5,447.90		3,385.36	826.09		10.65	9.50	.85	109.86	199.27	5.00			6.35	6.30	17.64		747.09		111.44	12.50	
	1918-1919	7,891.03		4,425.00	671.75		27.13	9.62	59.46	262.43	700.09	764.35			9.84		87.60		893.76				
Seed Inspection	1917-1918	7,913.02	3,000.00	3,833.42			150.60			27.60	15.38				19.00	126.90	236.26		486.79	5.00	12.07		
	1918-1919	6,283.73		4,350.00	250.00	322.32	65.80		1.59	57.87	11.91			5.00	2.60	71.20	368.10		777.34				
Ridgely Farm	1917-1918	4,854.46		1,620.00	1,001.55		40.80	.73			184.67	171.17	86.13		589.77				33.36	164.26	962.02		
	1918-1919	5,143.74		1,575.00	1,512.85		69.95	32.04	18.14		206.08	472.27	214.67		150.73	222.84			168.36	89.35	411.46		
General Extension	1917-1918	3,729.47	5.11	1,424.96	568.09	109.25	257.29	21.87	22.27		46.05				60.00	127.35			727.32	206.24	48.67	105.00	
	1918-1919	6,476.66		1,656.10	92.16	626.28	649.52	58.49		26.49	222.94			90.12	37.51	57.71	7.43		1,857.38	94.53			
State Horticultural Dept.	1917-1918	8,141.64		4,903.55	120.73		251.40	6.12		72.83	71.79			1.90	30.10	140.70	14.27		2,429.79	94.02	4.44		
	1918-1919	8,480.05		5,778.37	23.34		190.77			33.50	156.43			4.10					2,281.04	12.50			
County Demonstration	1917-1918	22,753.07		22,753.07																			
	1918-1919	48,054.25		38,000.00															10,054.25				
Farmers' Institutes	1917-1918	6,657.68	2,316.80	768.66	30.80	5.75	445.50	37.32			124.51				500.00	133.68	13.20		1,821.99	459.47			
	1918-1919	1,691.64			13.00		182.44	14.58		9.19	147.65			1.40	119.13	209.53	48.00		248.50	698.22			
Federal Smith-Lever	1917-1918	36,983.67	2,488.90	20,786.27	28.87	3,005.53	936.32	16.07	11.90		347.06			3.75	49.98	794.38			8,336.29	178.35			
	1918-1919	35,095.28	30.00	16,722.75	10.05	1,989.08	1,643.94	10.59			412.87			27.87	50.00	2,427.91	321.32		11,256.54	192.36			
State Smith-Lever	1917-1918	21,371.39	298.64	13,511.32			586.42	14.89			61.98			19.00	53.50	1,146.57	90.55		5,588.52				
	1918-1919	28,628.04		19,413.19		990.50	880.02				186.85			16.71		508.38	561.67		6,069.64	1.08			
Federal Smith-Hughes	1918-1919	3,725.28		2,583.34							700.95			19.20		28.64			393.15				
Filtration Plant	1918-1919	17,323.71																			17,323.71		
Special Extension Fund	1918-1919	3,479.00		3,479.00																			
State Dairymen's Assn.	1918-1919	4,196.07		1,424.96	12.50		103.35			642.37						814.67			927.37			270.85	
Total Expenditures exclusive of College Proper and Eastern Branch		\$603,907.68	\$8,196.43	\$341,953.73	\$43,062.05	\$12,080.10	\$8,236.13	\$2,788.33	\$2,291.96	\$25,606.82	\$10,991.99	\$2,018.29	\$11,609.66	\$950.07	\$15,762.70	\$9,735.42	\$4,612.11	\$1,869.11	\$71,586.89	\$2,776.96	\$21,798.38	\$3,200.65	\$2,779.90

REPORT

OF THE

Maryland State Board of Agriculture

Organization

The Biennial Report of the Maryland State Board of Agriculture and the Board of Trustees of the State College for September 30, 1916, to September 30, 1917, gave a synopsis of the laws of the General Assembly of Maryland providing for these Boards and defining their powers and duties. The Report also included a statement of the organization of the Boards and the various branches of work under their supervision. Only very brief reference, therefore, will be made to these matters in this Report.

The law provides that the personnel of the two Boards shall be the same, the object being to unify the work of the State in all matters relating to Agriculture and Agricultural Education. The work, however, is roughly divided into two main groups: I—Inspection and Control, and II—Education and Investigation. Inspection and Control are functions particularly of the State Board of Agriculture, and Education and Research are functions of the State Board of Trustees. Economical administration requires the closest cooperation of these two groups, often requiring men to function in both fields.

General Powers

The general powers of the Board as stated in Article 7 of the Laws of 1916, Chapter 391, are as follows:

"The State Board of Agriculture shall investigate the conditions surrounding the breeding, raising and marketing of live stock and the products thereof, and contagious and infectious diseases affecting the same; the raising, distribution and sale of farm, orchard, forest and nursery products, generally, and plant diseases and injurious insects affecting the same; the preparation, manufacture, quality, analysis, inspection, control and distribution of animal and vegetable products, animal feeds, seeds, fertilizers, agricultural lime, agricultural and horticultural chemicals, and biological products; and shall secure information and statistics in relation thereto and publish such information, statistics and the results of such investigations at such times and in such manner as to it shall seem best adapted to the efficient dissemination thereof; and except where such powers and duties are by law conferred or laid upon other boards, commissions or officials,

the State Board of Agriculture shall have general supervision, direction and control of the herein recited matters, and generally of all matters in any way affecting or relating to the fostering, protection and development of the agricultural interests of the State, including the encouragement of desirable immigration thereto, with power and authority to issue rules and regulations in respect thereof not in conflict with the Constitution and Laws of the State or the United States, which shall have the force and effect of law, and all violations of which shall be punished as misdemeanors are punished at common law; and where such powers and duties are by law conferred or laid on other governmental agencies the State Board of Agriculture and such other governmental agencies may cooperate in the execution and performance thereof, and when so cooperating each shall be vested with such authority as is now or may hereafter by law be conferred on the other. The powers and duties herein recited shall be in addition to and not in limitation of any power and duties which now are or hereafter may be conferred or laid upon said Board."

Live Stock and Live Stock Products

The investigations surrounding the breeding, raising, and marketing of live stock and the products thereof are centered in the Division of Animal Industry of the State College, including work in these lines in the Experiment Station and Extension Service. The work accomplished in these Services will be presented in the reports of those branches.

The educational and investigational work in reference to animal diseases is also assigned to the College and will be discussed under Animal Industry.

The Live Stock Sanitary work is organized as a special section, with headquarters in Baltimore. In addition to the powers provided in the Act creating the Board of Agriculture, this work is further provided for by a special Act, Laws of 1916, Chapter 337. A full report of the operations of this section is included herein.

Hog Cholera

We wish especially to call attention to the work on control of hog cholera, conducted in cooperation with the Bureau of Animal Industry of the United States Department of Agriculture. The work has been well organized in most of our counties and is highly appreciated by our farmers. The prevalence of the disease in the State has been only about one-fourth the number of cases for the rest of the country. The cost of control has been only about one-tenth the average cost in the United States. For 17 months, in 20 counties, only 268 outbreaks occurred, and in no case was the disease permitted to spread to other farms. These results were accomplished through organization of the farmers and education in better care and feeding, cleanliness and disinfection, quarantine and sanitary control, use of serum only in out-

breaks and greatly restricted use of the double treatment. We believe that this procedure will eventually result in the practical eradication of the disease.

Tuberculosis Eradication

Special attention should also be called to the Bovine Tuberculosis Eradication work conducted in cooperation with the Bureau of Animal Industry of the United States Department of Agriculture, under a special Act of Congress. The losses caused by this disease to cattle and hogs, especially dairy cattle, and the dangers resulting from the use of raw milk from tuberculous animals make it highly important that the work of eradication should be vigorously prosecuted. It was started as a war food conservation and production measure. The Maryland Council of Defense, upon request of the State Board of Agriculture, allotted \$10,000 to pay the State's share of the indemnity for condemned cattle, the Government providing a like amount and also furnishing a corps of inspectors cooperating with our Live Stock Sanitary officers. The progress of the work has been extremely satisfactory. The funds available, however, have not been sufficient to push the work as rapidly as it should be pushed. The work can now be accomplished with the cooperation of the Government at about one-third what it will cost the State to do it alone. A sufficient fund should be made immediately available to secure the largest possible cooperation of the Government.

Dairy Inspection

The Act creating the State Board of Agriculture provides for efficient dairy inspection. Provision for starting this work was made in the budget for this biennium. Owing to war conditions, the amount allowed for the work had to be reduced and our efforts directed more to the tuberculosis eradication. Plans for the dairy inspection work have been formulated, and an effort is being made to bring about closer cooperation with the dairy inspection work of the Maryland State Board of Health, the Baltimore City Board of Health, and the Board of Health of the District of Columbia. At the present time the Maryland farmer has to deal with all of these agencies. If a cooperative uniform system could be developed, it would be of great advantage to all concerned.

Traveling Dairy Inspection Laboratory

In response to a joint request from Charles J. Bonaparte, President, Consumers League of Maryland; Mrs. M. W. Sanderson, President, Maryland State Federation of Women's Clubs, and Mrs. Francis King Carey, Milk Director of the Women's Civic League, representatives of the State Board of Agriculture, and the State Board of Health have given special consideration to the proposal that the two Boards cooperate in organizing and conducting a traveling laboratory on the

plan so successfully used by the army during the war. This laboratory, fitted up on a motor bus, could go from place to place with all of the equipment necessary to do the dairy inspection work required by each Board. The project is favorably recommended and funds for financing it will be requested by the Boards in their respective budgets.

Cooperation with the Maryland Council of Defense

The Board of Agriculture has cooperated actively with the Maryland Council of Defense, as well as with the United States Department of Agriculture, the Food Control Service, the National Research Council, and the other State and National organized agencies for winning the war. Every possible resource of the Board was utilized in this work. The Board wishes to express to these agencies its heartiest appreciation for the fine cooperative spirit always manifested. The reports of this cooperative work are included under the College Extension Service and the Live Stock Sanitary Section.

Encouragement of Immigration

The Act creating the State Board of Agriculture and defining its powers provides that the Board shall take the necessary steps to encourage immigration. One of the best means of accomplishing this is to make the natural advantages of the State known outside its borders. This is accomplished through material furnished to the press inside and outside the State; through addresses of representatives of the State at conventions and meetings, especially outside the State, and through official publications relating to the State's industries. All of these means have been employed, and requests for information indicate a rapidly growing interest, especially in connection with the opportunities in agriculture and horticulture.

Marketing Investigations

The Act establishing the State Board of Agriculture provides that the Board shall investigate the conditions surrounding the marketing of live stock and live stock products, and farm, orchard and nursery products generally. It provides further that the Board shall have general supervision, direction and control of these and other specified matters, and generally of all matters in any way affecting or relating to the fostering, protection and development of the agricultural interests of the State, with power and authority to issue rules and regulations in respect thereof not in conflict with the Constitution and Laws of the State or of the United States which shall have the force and effect of law.

The Board desires to use these very large powers in *education* rather than *regulation*.

At the request of the Maryland Council of Defense, the Board made a special study of the cost of producing and distributing milk in Mary-

land. The work was carried out through the State College Extension Service, with the cooperation of the Maryland Public Service Commission. The report of the first survey, showing winter costs, was published December 15, 1917, by the Maryland Council of Defense. Later surveys covering spring and summer costs have been conducted and published by the Extension Service. All of them have shown, in conformity with surveys conducted by colleges, State departments of agriculture, legislative and commercial commissions in other States, that on the average the farmer receives for his milk less than the cost of production.

The difficulties in securing a hearty response from the average farmer in eradicating disease in his dairy herd and in improving his barns and methods of handling milk according to the numerous State and municipal requirements are traceable principally to the fact that the milk business does not pay. It means hard, confining work, long hours, constant worry, and financial loss. It is reduced, therefore, to the lowest limits consistent with the requirements of the farm business as a whole, as it is eliminated altogether in favor of other live stock. The latter process is in the ascendancy at the present time in the market milk districts. This constitutes a serious danger to agriculture, because the dairy cow is the most economical producer of animal food material for human consumption. It also constitutes a serious menace for the health and prosperity of our people. A scarcity of milk would not only increase its selling price, thus reducing its use from that cause, but there would be less per capita, so that it could not be secured at any price. Recent investigations have shown that there is no substitute for milk in human nutrition. The average per capita consumption is about half what is necessary to maintain healthy growth and tissue repair, and resistance to diseases, such as tuberculosis, pellagra, rickets, etc.

Dr. McCullom, formerly of the Wisconsin Experiment Station, now of the School of Hygiene and Public Health of Johns Hopkins University, in his recent book on the "Newer Knowledge of Nutrition," says: "Milk is without doubt our most important foodstuff. This is true, because the composition of milk is such that when used in combination with other foodstuffs of animal or vegetable origin it corrects their dietary deficiencies. Soluble vitamins, as found in milk, are just as essential for the maintenance of a full-grown man or animal in a state of health as they are for the support of growth in the young."

To supply the milk really needed in Maryland by our present population, our production should be doubled. The people, however, must be educated to understand the need for more milk and to use it at a price somewhere near its relative food value. A price covering the cost of production plus a small profit would, on account of the importance of dairying in maintaining soil fertility, insure the production of the amount required.

Cooperation with the State Dairymen's Association

The State Board of Agriculture through the College and Extension Service has cooperated with the dairymen of the State in improving their methods of production and marketing. One of the first steps necessary was to perfect local and State organizations, for the purpose of cooperating with the Extension Service of the State and Government in improving herds and methods of management, improved methods of handling, grading and marketing the product. With the aid of the United States Bureau of Markets, a plan of organization was perfected and incorporated under the laws of the State as the Maryland State Dairymen's Association. This Association has already accomplished much in improvements all along the line.

* Cost of Producing Tomatoes

It has been necessary during the year, at the urgent request of those interested in the tomato industry, to begin a study of the cost of production and marketing this crop, representing one of the largest and most important horticultural crops of the State. The great tomato-canning industry of Maryland, the largest in the United States, is the primary market for the tomatoes produced. The interests of the producers and canners are, therefore, mutual. The one cannot exist without the other. They must cooperate to develop and improve the industry. A full report of this work will be found in the Report of the Extension Service.

THE LIVE STOCK SANITARY SECTION, MARYLAND STATE BOARD OF AGRICULTURE

R. C. REED, *Director*

During the past two years this State has been comparatively free from any serious outbreaks of contagious and infectious diseases among live stock, with the exception of hog cholera, which, in the latter part of the summer of 1919, seemed to be rather prevalent in certain sections of the State.

However, owing to the untiring efforts of Bureau of Animal Industry veterinarians cooperating with the State authorities, the disease was held in check and rarely spread to other premises than those originally infected after the cases were reported to the Inspector in charge, and in no instance did it show any evidence of becoming epidemic.

Records of hog cholera control work are kept in the office of the Federal Inspector in charge at College Park, and investigations made by State inspectors and reports received from practicing veterinarians are immediately forwarded to the College office.

Hog Cholera

The cooperative hog cholera work from October 1, 1917, to September 30, 1919, may be briefly summarized as follows:

Investigations, 1,469; autopsies, 277; post-mortem examinations, 215, diagnoses, 649; interviews with hog owners, 4,084; farms visited, 2,534; meetings held, 543; attendance at meetings, 54,628; vaccination demonstrations, 153; miles traveled, 81,863; hogs treated by Bureau of Animal Industry veterinarians for demonstration purposes only, approximately 650; hogs treated by practicing veterinarians and others since July 1, 1918, approximately 30,000; reported outbreaks of hog cholera by counties since July 1, 1918, 590.

During this same period approximately 90,000 bulletins, circulars, etc., have been sent to farmers and others interested in swine raising.

It is interesting to note that in the case of new outbreaks where it was possible to trace the source of the infection it was found that 40 per cent. were caused by the feeding of garbage and about 33 per cent. were due to the introduction of new stock. Since July 1, 1918, reports show that hog cholera has existed on five hundred and ninety (590) farms, distributed in every county of the State. Of this number one was reported from Allegany County and one from Carroll, while Dorchester had the greatest number, ninety-three (93), the other counties varying all the way between these numbers.

Since hog cholera is such a serious menace to the swine industry and since the cooperative control work has been so satisfactory during the nearly three years it has been in progress, indications are that the time has come for starting eradication work. In order to do this successfully, it will be necessary to employ a sufficient force of inspectors to rigidly enforce the rules and regulations of the State Board of Agriculture, which we are confident are of such a character that their strict enforcement will eradicate the disease. Therefore, it is to be hoped that the General Assembly will see its way clear to grant the funds requested, in order that the State may be freed of this dread disease and swine raising be made safe for the farmers of Maryland.

Tuberculosis

In Maryland, as in practically all of the States, bovine tuberculosis is omnipresent, and must be fought constantly by those in charge of the control of animal diseases. Efforts along this line can only meet with success when the hearty cooperation of the cattle owners is secured. This cooperation has been secured in many cases, especially since the State has entered into a working agreement with the Federal Bureau of Animal Industry. Applications for tests are now coming in so fast that it is impossible to take care of all of them promptly and keep up with the re-tests as they come due with our present force. Also, unless a much larger indemnity fund is provided, as well as funds for more inspectors, many who want clean herds will have to suffer disappointment.

Under this plan, known as the "Agreement for the Tuberculin Testing of Herds of Cattle," the Tuberculosis Eradication Division of the United States Bureau of Animal Industry and the State authorities

permit inspectors to make tuberculin tests free of charge to the owners upon the signing of an agreement for the tuberculin testing of herds of cattle by the "Tuberculosis Free Accredited Herd" method. When tubercular animals are found they are slaughtered under Federal inspection and the carcasses and hides sold, salvage being deducted from the appraisal as made by the Federal and State Inspectors; the balance after the deduction of salvage is divided into three parts, the Government standing one-third of the loss, the State one-third, and the owner the remainder—the maximum amount of appraisement to be \$150 on pure-bred animals and \$75 on grades.

To make any part of the appropriation made by Congress available for use in Maryland for the payment of indemnities, it is obligatory upon the State to spend an amount equal to that paid by the Federal Government. The Maryland State Board of Agriculture, wishing to take advantage of this opportunity and having no appropriation from which indemnities could be paid, applied in October, 1918, to the Maryland Council of Defense for \$10,000 to start this important work; this amount was turned over to the State Board of Agriculture. The following statement gives a summary of the expenditures made from this fund; also a summary of the expenditures of certain amounts transferred by the Governor's approval, from expense items in the Live Stock Sanitary Budget for 1918-1919 to a fund for payment of indemnities:

Received from Maryland Council of Defense....	\$10,000 00
Interest on Bank Balances.....	41 50
Paid for Indemnities.....	\$8,652 74
Cash on hand.....	1,388 76
	<hr/>
	\$10,041 50
	<hr/>
	\$10,041 50
 Budget item "Payment of Indemnities".....	 \$3,900 00
Paid for Indemnities.....	\$3,825 71
Balance in Budget item.....	74 29
	<hr/>
	\$3,900 00
	<hr/>
	\$3,900 00
Total amount expended in payment of indemnities under the cooperative plan.....	\$12,478 45

Three hundred and seventy-nine (379) herds are now under Federal and State supervision, and from September 30, 1918, to October 1, 1919, nine thousand one hundred and thirty-six (9,136) cattle were tuberculin tested and eight hundred and seventy-nine (879) reactors found; twenty-nine are being retained under quarantine and seven hundred

and sixty-four (764) have been slaughtered, at an average cost to the State for indemnities of about \$16.33 per head. Of the reactors slaughtered two hundred and nineteen (219) were pure bred and five hundred and forty-five (545) were grade animals.

Other States have realized the importance of this work and have appropriated funds to be used for this specific purpose, and the Maryland authorities in control of the diseases of domestic animals have felt that, with the work started and with most satisfactory results obtained thus far, the next General Assembly of Maryland would, when the matter was brought to its attention, provide a sufficient fund to be used to pay indemnities and the necessary operating expenses to continue this tuberculosis eradication campaign.

Under our plan for the sale of carcasses of tubercular cattle, by which our inspectors see to the slaughter and sale of the animals, good prices have been received and the losses to the owners and the indemnities paid by the Government and the State have been reduced to a minimum. In a number of instances cattle brought more than the appraised value. Maryland is advancing rapidly as a dairying State, and it is of vital importance that every effort be made to encourage this industry; and the eradication, or at least control, of tuberculosis is, of course, a necessary step, not only to protect livestock owners and breeders, but to secure an adequate supply of pure milk from healthy cows to the cities and towns.

At the present time we have twenty-nine (29) fully accredited herds in Maryland, and a much larger number which are under supervision with a view to becoming accredited. If this work is continued, within a comparatively short time it will be possible to buy dairy and breeding stock from herds which are known to be healthy.

Following is a report of tuberculin tests made in Maryland by Federal Inspectors and local veterinarians, as also statement showing tests made at the State Testing Station at the Union Stock Yards, Baltimore:

Fiscal Year Ending September 30, 1918

	<i>Passed</i>	<i>Reacted</i>	<i>Suspicious</i>	<i>Total</i>
Cattle tuberculin tested by Maryland Veterinarians as reported to the Maryland State Board of Agriculture	3,954	232	3	4,189
Tuberculin tested by State Officials at Testing Station, Union Stock Yards, Baltimore.....	756	4	0	760
Tuberculin tested by United States Bureau of Animal Industry.....	2,267	145	14	2,426
	<hr/> 6,977	<hr/> 381	<hr/> 17	<hr/> 7,375

Fiscal Year Ending September 30, 1919

	<i>Passed</i>	<i>Reacted</i>	<i>Suspicious</i>	<i>Total</i>
Cattle tuberculin tested by Maryland Veterinarians as reported to the Maryland State Board of Agriculture	6,192	500	20	6,712
Tuberculin tested by State Officials at Testing Station, Union Stock Yards, Baltimore.....	819	13	0	832
Tuberculin tested by United States Bureau of Animal Industry.....	8,105	879	152	9,136
	<hr/> 15,116	<hr/> 1,392	<hr/> 172	<hr/> 16,680

Bang Farm

The retaining in quarantine of pure-bred reactors with valuable blood lines and at the same time of outstanding merit as individuals for breeding and investigational purposes is often advisable, provided they can be kept under proper supervision. This will necessitate the maintaining of a farm near the College which shall be directly under the supervision of the School of Veterinary Medicine and the Live Stock Sanitary Section of the State Board of Agriculture. It will give an opportunity not only to save some valuable calves, but will also supply most excellent material for the study of the disease and the best methods for controlling it.

It is, therefore, recommended that, if possible, a farm accessible to the College be obtained, and that such breeding and other experiments and investigations be conducted on it by the School of Veterinary Medicine as shall seem wise for the purpose of building up and safeguarding the breeding industry of the State and of increasing our knowledge of tuberculosis, looking toward the control and eventual eradication of this disease from our farm animals.

In order to do this, a fund should be provided for the purchase of a suitable farm conveniently located, and for the maintenance of such a project. It is estimated that the cost of such a project, including land, buildings, equipment, and maintenance, would be approximately \$40,000.

Dairy Inspection

Dairy inspection by this Department has been confined to a general survey of the State to see what really is required to establish and maintain an adequate system of inspection. The appropriation under which this Department has been working will not allow the appointment of a sufficient number of inspectors to pay the expenses of an inspection that would give the proper protection to the consumers of dairy products. Only one dairy inspector has been employed, and a great part of his time has been taken up in making a general survey

of the dairy conditions and in getting the work laid out. It has also been necessary, due to lack of sufficient force to carry on the various branches of the work, to use him on other than dairy inspection work more than we have done. Dairy inspection of farms supplying milk to Baltimore City is made by the inspectors of the City Health Department, and dairymen in Maryland furnishing milk to the District of Columbia are under the supervision of the Washington authorities. Should this Department be able to secure an appropriation large enough to maintain a force of inspectors in the field at all times, good results can be obtained in this branch of the work; but unless careful and frequent inspections can be made, little good will be accomplished. The plans as formulated will require not less than four inspectors, which number must be increased as the work progresses.

Rabies

While rabies has been found in certain sections of the State, the disease has not spread over large areas and, with the exception of Baltimore City and the counties adjacent to the District of Columbia, no more than the usual number of scattered cases have been reported. It became necessary to quarantine Baltimore City and a section of Baltimore County, as well as Montgomery, Howard and Anne Arundel Counties, in the summer of 1919, in order that stray dogs might be picked up and destroyed. The Baltimore Police Department, the State and City Health Departments and the Society for the Prevention of Cruelty to Animals have rendered valuable assistance in the City of Baltimore, especially in helping to maintain the quarantine and protect the public against rabid dogs. The Health Department of the District of Columbia has also given most helpful cooperation in reporting cases which have occurred, both within the District and in Maryland surrounding the District of Columbia. Thanks to the efforts of these cooperating agencies and the vigilance of the inspectors from this Department, the most serious outbreak—the one in Baltimore City—was placed under control, though occasional cases continue to be reported and the danger can never be eliminated until the large number of worthless and apparently ownerless dogs can be prevented from running at large.

Cerebro-Spinal Meningitis

This disease, commonly known as "forage poisoning," has been reported in several of the counties of the State, and the animals have been treated by local veterinarians and the owners advised by our inspectors as to the proper feed to use and the kind of foodstuffs to avoid using to prevent a recurrence of the disease.

Anthrax

Anthrax was reported on two farms in Queen Anne's County and on one farm in Howard County; prompt action prevented a spread to

other premises, and no new cases have been reported for several months.

Blackleg

Blackleg has been reported and investigations made in the counties of Western Maryland, Southern Maryland, in several of the counties on the Eastern Shore, and a few cases in Baltimore, Cecil and Harford Counties. By the prompt vaccination of the well animals the trouble has been kept under control.

Hemorrhagic Septicemia

This disease has not been as prevalent as in former years and has caused very little trouble in the State.

Glanders

Glanders was found to exist in the army camp at Camp Meade and at Havre de Grace. At Camp Meade the army veterinarians, with the assistance of representatives of this Department, inspected and tested nine hundred and fifty-three (953) horses and found eight (8) affected with the disease. These animals were destroyed and no further trouble developed. Immediate action by the State Inspectors from this office prevented the spread of glanders from the premises at Havre de Grace, where several cases were found in horses owned by the "Main Shows" wintering there. Four horses were killed and buried, and the premises quarantined and kept under observation.

Live Stock Sanitary Laboratory

Although this Laboratory has been in operation but a year, it has proved to be a most valuable aid to the work, and the necessity of maintaining it can no longer be questioned. A detailed report of the Pathologist in charge of the Laboratory will be found on page 26 under the Division of Animal Industry in the College report.

Summary

A summary of the work of this Department for the past two years shows that no alarming outbreaks of disease in animals have occurred and such cases as have been reported have been handled promptly.

Local veterinarians in the several counties have been of assistance to the Department and are cooperating to a greater extent than formerly, and we have every reason to believe that, with the educational campaign being conducted by the Federal Government and the State Extension Service and the investigational and control work being done by this Department, the interests of the Maryland farmers and dairymen will soon be well protected.

The following statements show that this Department returned to the State Treasury in 1918 an unexpended balance of \$989.70, and in 1919, \$5,076.80:

RECEIPTS AND EXPENDITURES FOR FISCAL YEAR ENDING SEPTEMBER 30, 1918

	<i>Appropriation</i>	<i>Expended</i>	<i>Balance</i>
Appropriation	\$25,000.00		
Salary, account Central Office		\$4,947.46	
Salary, account Field Work		4,500.00	
Per diem, Field Work		378.25	
Dairy Inspectors		166.67	
Rent		500.03	
Office Supplies		744.39	
Postage		130.33	
Telephone and Telegraph		143.00	
Freight and Express		11.91	
Printing		705.51	
Books and Periodicals		374.80	
Medicines and Medicinal Supplies		532.46	
Laboratory Supplies		4,879.26	
Expense, Field Work		913.77	
Expense, Testing Station		45.87	
Salary, account Special Hog Cholera Work		1,275.17	
Expense, account Special Hog Cholera Work		3,394.77	
Salary, account Biological Laboratory		366.65	
	<u>\$25,000.00</u>	<u>\$24,010.30</u>	<u>\$989.70</u>

RECEIPTS AND EXPENDITURES FOR FISCAL YEAR ENDING SEPTEMBER 30, 1919

	<i>Appropriation</i>	<i>Expended</i>	<i>Balance</i>
Chief Animal Industry	\$3,000.00	\$3,000.00	
Secretary—Live Stock Sanitary Section	2,000.00	2,000.00	
Veterinarian in charge Field Work	2,100.00	2,100.00	
Asst. Veterinarian in charge Field Work	1,200.00	1,200.00	
Deputies—Field Work	450.00	450.00	
Stenographer	500.00	500.00	
Dairy Inspector	2,000.00	2,000.00	
Per diem, Field Work	1,500.00	486.00	\$1,014.00
Pathologist—Live Stock Sanitary Laboratory	2,000.00	2,000.00	
Stenographer—Hog Cholera Work	1,000.00	1,000.00	
Emergency Reserve	4,130.00	1,311.25	2,818.75
	<u>\$19,880.00</u>	<u>\$16,047.25</u>	<u>\$3,832.75</u>

	<i>Appropriation</i>	<i>Expended</i>	<i>Balance</i>
Rent	\$1,150.00	\$1,031.29	\$118.71
Postage	400.00	375.00	25.00
Office Supplies	1,100.00	1,057.07	42.93
Printing	700.00	698.54	1.46
Books and Periodicals	100.00	77.83	22.17
Medicines and Medicinal Supplies	740.00	693.46	46.54
Laboratory Supplies	500.00	466.15	33.85
Expenses—Hog Cholera Work	4,000.00	3,769.22	230.78
Telephone and Telegraph	200.00	146.80	53.20
Freight and Express	80.00	16.68	63.32
Expenses—Dairy Inspection	1,000.00	831.16	168.84
Traveling Expenses—Field Work	1,150.00	876.97	273.03
Expenses—Testing Station	100.00	10.07	89.93
Payment of Indemnities	3,900.00	3,825.71	74.29
	<u>\$15,120.00</u>	<u>\$13,875.95</u>	<u>\$1,244.05</u>

SUMMARY

	<i>Appropriation</i>	<i>Expended</i>	<i>Balance</i>
Salaries and Wages	\$19,880.00	\$16,047.25	\$3,832.75
Expenses	15,120.00	13,875.95	1,244.05
	<u>\$35,000.00</u>	<u>\$29,923.20</u>	<u>\$5,076.80</u>

THE STATE TOBACCO WAREHOUSE

WM. J. FRERE, *Superintendent*

The years 1918 and 1919 were the most difficult and perplexing in the history of the State Tobacco Warehouse, owing to the lack of shipping and congestion of all freights, caused by a multitude of obstacles growing out of the World War. However, the crops have been handled with but slight delays, short embargoes being necessitated until space could be made to handle the unprecedented crop of 1918.

There is but one way to insure against embargoes in the future and that is for the State to build more warehouse room, and in that connection I would recommend an appropriation or loan sufficient to rebuild and enlarge the State Warehouse on the north side of Conway Street; if the walls would stand inspection, they could be made six stories high, replacing the old wood floors with modern concrete. This house has been and will continue to be a source of expense; it is old and needs repair from time to time.

I feel safe in stating that, if the warehouses are conducted on a strictly economical business basis, in a few years the revenue accruing from them will pay the loan or approbriation back, as you can judge from the financial side of this report.

In conclusion, I wish to say that my force and I have done all in our power to serve the farmer to the best of our ability; we have been fair and fearless in the discharge of our duties; but it must be remembered that we have had a World War. I am proud to say that, notwithstanding the disadvantages we have labored under, conditions were never better in the State Warehouses than now and the standard of Maryland tobacco was never higher than at the present time.

There are some few changes that could be made in the present law governing the State Tobacco Warehouses, but they are very few, and should be looked well into before being made.

Statement from July 1, 1917, to June 30, 1919

Receipts	
Cash on hand July 1, 1917.....	\$ 2,479.79
Outage	\$120,926.50
Shortage	43,045.90
Reinspections	2,441.25
Re-draws	1,978.75
Reviews	3.50
Re-packs	86.50
Stays	1,571.00
Rent	1,240.52
Miscellaneous	6,768.52
Error in Pay-roll	19.00
	<hr/>
	178,081.44
Borrowed from Bank	16,650.30
	<hr/>
	\$197,211.53

Disbursements

Salaries	\$92,526.90	
Reclamations	2,965.29	
Supplies	10,256.35	
Incidentals	906.53	
Miscellaneous	26,543.94	
	<hr/>	\$133,199.01
Paid Bank for Money Borrowed.....	17,000.00	
	<hr/>	150,199.01
		<hr/>
		\$ 47,012.52
Outstanding Accounts June 30, 1919.....		902.50
		<hr/>
Check sent to the Comptroller October 8, 1919.....		\$ 47,915.02

Statement from July 1, 1919, to September 30, 1919

Receipts

Cash on hand July 1, 1919.....	\$47,012.52	
Cash received from July 1 to September 30, 1919	34,298.65	
	<hr/>	\$81,311.17

Disbursements

Cash paid out from July 1 to September 30, 1919		33,742.15
		<hr/>
		\$47,569.02
Cash in bank October 1, 1919.....	\$47,428.86	
Cash in drawer.....	140.16	
	<hr/>	\$47,569.02

Report of the Number of Hogsheads Received and Shipped

From July 1, 1917, to June 30, 1919

Number of hogheads on hand July 1, 1917.....	10,083
Received from July 1, 1917, to December 31, 1917.....	12,831
Received from January 1, 1918, to December 31, 1918.....	23,904
Received from January 1, 1919, to June 30, 1919.....	11,122
Shipped from July 1, 1917, to December 31, 1917.....	6,546
Shipped from January 1, 1918, to December 31, 1918.....	22,497
Shipped from January 1, 1919, to June 30, 1919.....	18,754

Report from June 30, 1919, to September 30, 1919

Received from July 1, 1919, to September 30, 1919.....	18,703
Shipped from July 1, 1919, to September 30, 1919.....	9,372
Stock on hand October 1, 1919.....	25,169

Needs for the Biennium—1921-22

In submitting the biennial estimate for 1921 and 1922, the Board of Agriculture and Trustees of the State College have been guided by the following considerations:

The College

1. Everywhere in the State the people have emphatically expressed their wish that the College should be organized and equipped to do a grade of work equal to the best in any State. That has been the policy during the period of reorganization. The success of the work in every department during the past two years is evidence of the wisdom of this course.

2. For many years the College has lacked proper equipment and personnel to do the work expected of it. The appropriations, while considerably increased over the small amount allowed during the first year of reorganization after being taken over by the State, were inadequate. The situation created by the war made it necessary to devote all energies and money to the war program and to cut out all building and permanent improvement projects, except those necessary in connection with war work. All but two of the buildings are old and badly in need of thorough overhauling. More or less extensive repairs have been necessary each year. The old heating and water pipes are nearly rusted out. Roofs, porches, steps and floors are in bad condition. Most of the buildings need paint, etc. The cost of this work has more than doubled.

3. Much of the dormitory, classroom and laboratory equipment is worn out and must be replaced, and much additional equipment is urgently needed. The cost of this will be more than double what it has formerly been.

4. For all kinds of labor, common, skilled, and semi-skilled, it has been necessary to pay approximately double the former rates paid by the College, but even at this the College is still paying from 20 to 30 per cent. less than the average paid outside, with the result that there is a constant turnover, much to the detriment to the work.

5. It was pointed out in the last report that the salary scale at Maryland State was the average minimum of fifty State colleges.

This has been corrected in part by bringing in new men, and some improvement has been made in other cases. In general, our salary scale is considerably below the average of the State institutions. A Government commission has found the average living wage of a Government clerk to be \$2,262. The necessary expenses of a professor or instructor in a college are considerably greater and the work is more exacting. A \$3,000 salary today is approximately the equivalent of \$1,500 two years ago. Institutions all over the country are making or planning increases partly at least to keep pace with the increased cost of living.

At the University of Michigan salaries have recently been increased 30 per cent. for instructors and assistant professors, and 25 per cent. for associate professors and full professors. The new scale of salaries is from \$1,300 to \$2,100 for instructors, \$2,200 to \$2,600 for assistant professors, from \$2,700 to \$3,100 for associate professors, and from \$3,200 to \$6,000 for full professors. The same scale applies to all colleges.

One hundred and eighty-seven institutions reported to the United States Bureau of Education increases granted in 1918-1919. One hundred and forty reported increases voted for 1919-1920. These ranged from 10 to 30 per cent.

The same is true of salaries of clerks and assistants. Sixty dollars a month formerly provided a fairly competent stenographer, now commanding \$1,200 to \$1,500. Skilled accountants, formerly available at \$1,500 to \$1,800, now command from \$2,000 to \$2,500 and more.

6. The war emphasized the need of specially trained men in every important industry, especially agriculture, engineering, and education. The College must expand its courses to meet these needs. Additional help is needed in Farm Crops, Dairy and Animal Husbandry, Horticulture, Agricultural Chemistry and Fertilizers, Plant Diseases, Bacteriology, Veterinary Pathology, Entomology and Zoology, Drainage and Road Engineering, Farm Machinery, Mathematics, English and Journalism, Spanish and French, Agricultural Economics, Marketing, and in several other departments.

7. Examination of the statistics of registration will disclose the rapid growth of the College. In five years it will have approximately 1,000 students to care for on the campus. The number of young women is increasing and is now up to our capacity to house them, either on or off the campus. Many more have expressed a desire to come as soon as suitable living conditions are available. Provision should be made for at least 100 women.

The dormitory for men—Calvert Hall—is overcrowded, many rooms having three and four men that should not have more than two. All available rooms in nearby towns are taken and the rates charged for outside rooms are too high. Students cannot afford to pay them. We must provide additional dormitory facilities immediately for at

least 200 men. Four dormitory houses for smaller groups are necessary to provide for overflow and to meet emergencies.

8. Great difficulty is also experienced in securing necessary help, especially that required to be close at hand, on account of the impossibility of finding a place to live. It is imperative that a number of small houses be constructed for this purpose. Sufficient rent can be charged to maintain them.

9. The present dining hall is of temporary construction. It has very little storage room and very inadequate cold storage, thus making it impossible to take advantage of the markets in purchasing supplies. The cost of living is mounting so fast that every possible means must be provided to keep it as low as possible. This is the largest cost in attending College, amounting to about 75 cents per day per student. The cost has been kept at this figure with great difficulty. Provision should be made for feeding 1,000 students and to provide the necessary storage, general and cold.

10. *Central Heating Plant.*—As the institution grows, a central power plant will be essential. It reduces the fire risk and cost of management and handling of coal and ashes, and is more convenient and safer. A spur track for handling coal and other freight would also pay for itself in a few years.

11. *Gymnasium, Armory and Athletic Field.*—As a land grant institution, Maryland is required to give a certain amount of military training to all its physically fit male students. The United States Government, besides furnishing the officers to conduct the work, furnishes equipment to the value of approximately \$75,000. The State is required to furnish adequate buildings and grounds for this work. This is not now done. A gymnasium and armory, with proper athletic fields, is essential for the military training as well as the general physical training and recreation of the students.

12. *Administration, Auditorium, Library and Museum, and Extension.*—A building for the purposes above mentioned is much needed now and will be imperatively needed four years from now. The largest auditorium on the grounds will hold about 500 people, and we frequently have need for a room capable of accommodating 2,000. Space in the Agricultural Building now occupied by the administration is urgently needed by the departments in the School of Agriculture. This is also true of the space occupied by the Extension Division. The extension work is growing so rapidly that it will soon need a building of its own.

13. *Chemical Laboratory.*—The building now used for a chemical laboratory and State fertilizer and feed analysis is entirely inadequate and unsuited for the work. A modern laboratory large enough to take care of the chemical work of the Experiment Station, in addi-

tion to the work of the College, should be available at the earliest possible time.

14. *Farm Machinery.*—The great importance of a knowledge of farm machinery is generally recognized. A building for this purpose, including garage and repair shop, is necessary.

15. *Eastern Branch of the Maryland State College.*—The Morrill Act requires that a certain proportion of the money coming from the United States Government shall go for college education of colored people in agriculture and the mechanic arts. This has been provided for in Maryland through cooperation with Morgan College at Princess Anne. The school there is under control of the Board of Trustees of the State College, the State retaining ownership of all permanent improvements made with State money. The needs for better industrial education of the colored race are evident. It makes them better and more efficient workers and citizens. The work is growing at Princess Anne, and an agricultural and mechanical building is urgently needed.

16. *Veterinary Pathology Laboratory.*—There is great need for enlarging the veterinary pathology work at the College. The rapidly increasing live stock interests in the State require it, and many Maryland boys desire training in this field. A beginning can be made for a comparatively small expenditure.

17. Barns and equipment for dairy cattle, beef cattle, sheep, hogs, and horses, with the necessary stock and equipment, are necessary, if proper and efficient work is to be provided in Agricultural Education. All of the stock now used by the College is the property of the Experiment Station. It was secured for experimental and not educational purposes, and is not well adapted for educational use.

18. *Land.*—The land now owned by the College is used largely for the Experiment Station and campus. It can provide for only a very limited amount of live stock. The institution should have an Animal Husbandry farm for beef cattle, hogs, horses, and sheep, and a dairy farm where the best breeds of cattle for Maryland may be kept. Such farms would have great educational value in the training of students. These farms would increase in value from year to year, and should be eventually self-sustaining, at least.

A special tract of land is needed for use in practical forestry work in the training of forestry students.

19. In order to better protect our water supply from Paint Branch, it is necessary to construct a dam. In this connection, provision should be made for some fish hatchery ponds in some low land owned by the College, valuable for this purpose. There is a growing demand for educational work in fish culture. Maryland has large water resources and possibilities of development in this direction.

Live Stock Sanitary Section

Hog Cholera.—Attention has been called to the important work accomplished in the control of hog cholera. It is the opinion of the State and Government experts that this disease can be largely eradicated, thus saving the large annual expense for the purchase and use of serum. We urgently recommend an appropriation large enough to accomplish this as far as possible in the next two years. The Government will cooperate as nearly as possible on a fifty-fifty basis.

Tuberculosis Eradication.—The United States Congress provided an emergency appropriation for the eradication of bovine tuberculosis in cooperation with the States on a fifty-fifty basis, as has been already explained in previous pages of this Report. The live stock breeders and farmers of Maryland have been cooperating heartily in this work, and in order to accomplish the most good and get the largest possible assistance from the Government a special appropriation is requested for this work.

Dairy Inspection.—Attention has been called to the need of an improved system of dairy inspection, unifying as far as possible work now being done by the State Board of Agriculture, the State Board of Health, and other agencies. The farmer is now pestered with too many inspectors. The aim should be to decrease the number and increase their efficiency. Money is needed for this and for the traveling laboratory to be used to accomplish part of the work.

State Tobacco Warehouses

General alterations, including the removal of the four present wood floors and replacing with five floors of concrete, thus increasing the storage capacity about 25 per cent., \$389,136.00.

These warehouses should return to the State receipts sufficient to pay for this enlargement within a period of seven or eight years. This enlargement is urgently demanded by the tobacco growers to take care of the Maryland tobacco crop.

ESTIMATES FOR NEXT BIENNIUM

Maintenance.	Biennium 1919-21	Proposed		Total for Biennium	Increase for Biennium
		1921-22	1922-23		
College Proper.....	\$164,518.00	\$836,420.00	\$836,420.00	\$672,840.00	\$508,322.00
Deficiency Appropriation.....	20,000.00	20,000.00	.....	20,000.00	.....
Deficiency in Interest.....	4,094.88	2,047.44	2,047.44	4,094.88	.....
Biological Laboratory.....	11,200.00	7,500.00	7,500.00	15,000.00	.....
Ridgely Farm.....	10,000.00	5,000.00	5,000.00	10,000.00	3,800.00
Seed Inspection.....	12,200.00	8,000.00	8,000.00	16,000.00	.....
State Fund.....	54,000.00	57,000.00	57,000.00	114,000.00	3,800.00
State Smith-Lever.....	55,225.86	50,030.95	46,480.39	96,511.34	60,000.00
State Horticultural Department.....	16,000.00	19,000.00	19,000.00	38,000.00	41,285.48
County Demonstration.....	96,000.00	78,000.00	78,000.00	156,000.00	22,000.00
General Extension.....	10,120.00	22,000.00	22,000.00	44,000.00	60,000.00
Marketing Fund.....	.....	10,000.00	10,000.00	20,000.00	33,880.00
Executive Expenses.....	10,000.00	5,000.00	5,000.00	10,000.00	20,000.00
Live Stock Sanitary.....	70,000.00	90,500.00	90,500.00	181,000.00	.....
Hog Cholera Eradication.....	.....	75,000.00	75,000.00	150,000.00	111,000.00
Dairy Inspection.....	.....	57,000.00	48,000.00	105,000.00	150,000.00
State Dairymen's Association.....	10,000.00	5,000.00	5,000.00	10,000.00	105,000.00
Eastern Branch.....	14,000.00	12,420.00	12,420.00	24,840.00	.....
Total Maintenance.....	\$557,358.74	\$859,918.39	\$827,367.83	\$1,687,286.22	\$1,129,927.48

ESTIMATES FOR NEXT BIENNIUM

Proposed New Buildings and Equipment at the College	Buildings	Equipment	Totals
Men's Dormitory.....	\$150,000.00	\$15,000.00	\$165,000.00
Women's Dormitory.....	98,000.00	10,000.00	108,000.00
Five Six-Room Dwellings.....	25,000.00	3,000.00	28,000.00
Dining Hall, Cold Storage and Ice Plant.....	150,000.00	20,000.00	170,000.00
Gymnasium, Armory and Athletic Fields.....	180,000.00	10,000.00	190,000.00
Central Heating Plant and Laun- dry.....	40,400.00	59,000.00	99,400.00
Heating Conduits.....	150,000.00		150,000.00
Chemical Laboratory.....	140,000.00	20,000.00	160,000.00
Farm Machinery, Garage and Re- pair Shop.....	40,000.00	10,000.00	50,000.00
Veterinary Pathology Laboratory	25,000.00	10,000.00	35,000.00
Beef Cattle Barn.....	37,000.00	19,000.00	56,000.00
Dairy Cattle Barn.....			
Horse Barn.....			
Sheep Barn.....			
Swine Barn.....	30,000.00	15,000.00	45,000.00
Spur Track.....			
Totals.....	\$1,065,400.00	\$191,000.00	\$1,256,400.00

**PROPOSED ALTERATIONS AND REPAIRS TO BUILDINGS AT
COLLEGE PARK, MD.**

	Estimated Cost	Equipment	Totals
High-Pressure Boiler, Agricultural Building.....	\$7,000	\$15,000	\$22,000
Dairy Laboratory, Meat Curing Laboratory and Live Stock Pavilion.....	5,000	32,000	37,000
Calvert Hall.....	13,500	3,000	16,500
Engineering Building.....	1,000	17,000	18,000
Water Tank Pump, Water Mains and Fire Hose.....	43,000		43,000
Sewers.....	21,000		21,000
Totals.....	\$90,500	\$67,000	\$157,500
Additional Land at College Park.....	\$50,000		\$50,000

PROPOSED NEW BUILDINGS AT EASTERN BRANCH

	Estimated Cost	Equipment	Totals
Agricultural Building.....	\$40,000.00	\$10,000.00	\$50,000.00
Drainage.....	1,000.00		1,000.00
Completion of Barn.....	5,000.00		5,000.00
Totals.....	\$46,000.00	\$10,000.00	\$56,000.00

SUMMARY OF ESTIMATES FOR BIENNIUM 1921-1922

	Total Biennium 1919-1920	Total Biennium 1921-1922	Increase Biennium
Maintenance	\$557,358.74	\$1,687,286.22	\$1,129,927.48
New Buildings and Equipment at College Park		1,256,400.00	1,256,400.00
Alterations and Repairs at College Park		157,500.00	157,500.00
Additional Land		50,000.00	50,000.00
New Buildings and Equipment at Eastern Branch		56,000.00	56,000.00
Grand Totals	\$557,358.74	\$3,207,186.22	\$2,649,827.48

ESTIMATED ADDITIONAL PERMANENT IMPROVEMENT NEEDS WITHIN FIVE YEARS

	Estimated Cost	Equipment
Three-Section Dormitory for Men	\$54,000	\$5,000
Two Small Dormitories for Women	31,000	4,000
Administration, Auditorium, Library and Museum ..	200,000	20,000
Extension and Promotion	95,000	25,000
Enlargement of Engineering Plant	100,000	10,000
Lighting of Grounds	10,160	
General Alterations and Repairs to Buildings	30,000	
Permanent Roads and Walks (Concrete), \$12,500 less if County cooperates	66,000	
Fences—Permanent	30,000	
Animal Husbandry Farm	50,000	
Dam and Fish Hatchery Ponds at College Park	30,000	
Total Estimated Needs	\$696,160	\$64,000

BIENNIAL REPORT

of the

University of Maryland

and

The Maryland State Board of Agriculture

From September 30, 1919, to October 1, 1921

Including a Summary of the Work and Needs of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of the work under the jurisdiction of the University and State Board of Agriculture, with estimates of the financial needs for the years 1922 and 1923.



Official Publication of the University of Maryland
Vol. 19 October 1, 1921 No. 1

Table of Contents

	PAGE
Letters of Transmittal.....	5
Organization of the Board.....	6
Introduction	7

THE UNIVERSITY

Organization of the University.....	11
Function of State University Education.....	13
Co-operation with Public School System.....	14
Research in Engineering.....	15
Development of Student Life.....	15
Education in Medicine, Dentistry, Pharmacy and Law.....	16
Corporation with State Agencies.....	16
Additions to Plant and Installation of Machinery.....	19
Needs of the University and State Board of Agriculture.....	20
Financial Report.....	34
Registrar's Report.....	67
The Extension Service.....	70
Miscellaneous Dairy Extension.....	85
State Horticultural Department.....	86
The Agricultural Experiment Station.....	99
The College of Agriculture.....	106
The College of Arts and Sciences.....	108
School of Dentistry.....	111
College of Engineering.....	114
College of Home Economics.....	117
The College of Education.....	120
The Summer School.....	124
The Graduate School.....	126
School of Commerce and Business Administration.....	129
School of Medicine.....	131
The School of Law.....	134
The University Hospital.....	136
Nurses' Training School.....	142
School of Pharmacy.....	143
Eastern Branch of the University of Maryland.....	145
Department of Military Science and Tactics.....	148
The Library.....	151
Changes in Personnel.....	153

THE STATE BOARD OF AGRICULTURE

Organization	160
General Powers.....	161
Live Stock Sanitary Section.....	162
Hog Cholera.....	166
The Live Stock Sanitary and Biological Laboratories.....	172

LETTERS OF TRANSMITTAL

*His Excellency, Governor Albert C. Ritchie,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last biennium. Appended you will find a statement of the financial needs for 1922 and 1923.

Very truly yours,

SAMUEL M. SHOEMAKER,

Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.

January 1st, 1922.

*Hon. Samuel M. Shoemaker,
Chairman, Board of Regents of the University of Maryland
and of the Maryland State Board of Agriculture.*

Sir: Herewith I am submitting a brief report of the work of the University of Maryland, the Maryland State Board of Agriculture, the Agricultural Experiment Station, Extension Service, and the other branches of work under the two Boards for the last biennium. A statement showing the financial needs of the University and the State Board of Agriculture for the next biennium is appended. I am also submitting a short statement of the various funds other than State appropriations used for the support of the University.

Very truly,

ALBERT F. WOODS,
President and Executive Officer.

January 1st, 1922.

BOARD OF REGENTS

(Members appointed by the Governor for terms of nine years)

SAMUEL M. SHOEMAKER, Chairman.....	1916-1925
Eccleston, Baltimore County.	
ROBERT CRAIN.....	1916-1924
Mt. Victoria, Charles County.	
JOHN M. DENNIS, Treasurer.....	1916-1923
Union Trust Company, Baltimore.	
DR. FRANK J. GOODNOW.....	1916-1922
6 West Madison Street, Baltimore.	
JOHN E. RAINE.....	1921-1930
413 East Baltimore Street, Baltimore.	
CHARLES C. GELDER.....	1920-1929
Princess Anne, Somerset County.	
DR. W. W. SKINNER, Secretary.....	1919-1928
Kensington, Montgomery County.	
B. JOHN BLACK.....	1918-1927
Roslyn, Baltimore County.	
HENRY HOLZAPFEL.....	1917-1926
Hagerstown, Washington County.	

COMMITTEES

UNIVERSITY AND EDUCATIONAL WORK

Dr. Frank J. Goodnow, Chairman

Robert Crain

Dr. W. W. Skinner

EXPERIMENT STATION AND INVESTIGATIONAL WORK

B. John Black, Chairman

Dr. W. W. Skinner

Henry Holzapfel

EXTENSION AND DEMONSTRATION WORK

Robert Crain, Chairman

B. John Black

John E. Raine

INSPECTION AND CONTROL WORK

John M. Dennis, Chairman

Henry Holzapfel

Charles C. Gelder

Introduction

In submitting a report of the University of Maryland and the Maryland State Board of Agriculture for the last biennium, involving the time from September 30, 1919, to October 1, 1921, it should be remembered that the Boards governing the two organizations, while in personnel the same, are provided for under the laws as separate organizations with definite powers delegated to each. It must also be remembered that much of the work under the two Boards is so closely related, that it is difficult to make separate reports without duplication. Furthermore, the work of the old Maryland Agricultural College, later the Maryland State College of Agriculture, and now the State University, organized under the corporate name of the University of Maryland, has so broadened the scope of its activities that the fields of education it now embraces are many times greater than formerly.

Therefore, while this primarily is a report covering work of the last biennium, it seems proper to give, at the beginning, a brief history of the University and a short resume of the powers of the two Boards, and outline the work over which each has separate control.

The University of Maryland, as now organized, includes all the work commonly found in the State universities of other States so far as needed in Maryland. It combines two historic institutions. The old Maryland Agricultural College was chartered in 1856 and was the second agricultural college in the Western hemisphere to open its doors. The institution was operated privately until 1862, when it was designated the Land Grant College of Maryland to receive the financial aid from the Federal Government which accrued to Maryland from the Federal Land Grant Act of that year. This act gave to each State and Territory, that should claim its benefits, a proportionate amount of unclaimed Western lands; from the sale of these lands and the investment of the money obtained therefrom, the institution has since drawn interest at five per cent.

The condition under which the State received this aid from the Federal Government was that the proceeds from the sale of these lands should be applied to the "endowment, support and maintenance of at least one college where the leading object shall be without excluding scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agricultural and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several

pursuits and professions of life." The institution thus became in part a State institution; but it continued to be operated under private control with some State support until 1914, when its control was taken over entirely by the State.

In 1916 a new charter was granted the institution, and the name changed from Maryland Agricultural College to the Maryland State College of Agriculture. Under this new charter the College was made co-educational and power granted to develop an institution of higher learning which should be comparable to other State owned and State controlled colleges and universities.

In the fall of 1919 there began to develop a widespread agitation for the State College to take over the old University of Maryland, and thus establish in name, as well as in fact, for Maryland, a real State University. This agitation continued until a definite proposal of amalgamation was made by the then Board of Regents of the old University of Maryland. Such action, it was realized, involved a responsibility on the State which should be given long and careful consideration for final action. The matter was discussed in several meetings of the Board of Trustees of the Maryland State College. The definite proposal, made by the University of Maryland, was, that the property and all the rights of the old University of Maryland should be turned over to the Maryland State College, to be operated by it under its charter. This proposal was accompanied by the resignations of the members and the consequent abolition of the body which then governed the medical, law, dental and pharmacy schools, operated in Baltimore under the name of the University of Maryland. It was suggested that the combined institutions retain the name "University of Maryland" or operate under the name "Maryland State University." The Board of Trustees, after careful consideration decided to accept the proposal of those in charge of the old University of Maryland, and steps were taken to draw up a bill to be presented to the General Assembly to effect legally the changes agreed upon. The bill was presented to the Assembly, passed without a dissenting vote, and was approved by Governor Ritchie. This resulted in one of the oldest institutions in the country combining with the Land Grant College and becoming a part of the State's Land Grant institution; and, consequently, the whole became the representative of both the State and Federal Government in higher education and research.

The history of the old University of Maryland, that part of the present University of Maryland now located in Baltimore, is long and honorable. It began with the chartering of the College of Medicine of Maryland in Baltimore in 1807. This institution graduated its first class in 1810, and in 1812 was given the right to have other departments and constituted, under the law, "an University by the name and under the title of the University of Maryland"; as such it was the first university to bear the name of its State. The Law and

Medical Schools have become widely known, and the Medical School Building at Lombard and Greene Streets, erected in 1814-15, is the oldest building in America devoted to the teaching of medicine. The School of Pharmacy and the School of Dentistry were organized later and were among the first in the United States to specialize in the teaching of these professions.

Thus, Maryland has today a University with a long and honorable career behind it, a future full of great good and possibilities of exceptional service to the commonwealth. It is of the work of this institution that this report deals, and on the projects planned for it is based the summary of financial needs for the next biennium.

The Maryland State Board of Agriculture is organized to direct and control all work in the State that has to do with the regulation and law enforcement of agricultural development. In 1915 it was realized very fully by those most interested in the building up of the State's main resources that there should not only be firmer administration of the laws passed to cover the inspection and control work in agriculture but also a general revision of the laws themselves.

Therefore, at a meeting in Baltimore in which were represented the agricultural associations and clubs of the State as well as the grange, a new law to centralize regulatory control and thus create a new agency for the administration of the law was prepared. This new law also proposed to give to the Board which was to be organized broad powers for the general and wise development of all branches of agriculture. It was at first proposed to place the regulatory and inspection work connected with agriculture and general agricultural development under the Board of Trustees of the Maryland Agricultural College, the reorganization of which was under way at the same time. However, it was felt that many features of this work should be handled by a Board separate under the law; and at the same time it was recognized that so closely co-ordinated would be this work with the functions of the Agricultural College that any scheme, to be effective, would have to provide for the closest kind of co-operation between the administrative boards. Therefore, when it was proposed that a State Board of Agriculture to have jurisdiction over these matters above mentioned be organized and that its functions be well defined under the law, and in order to make absolutely certain that there should also be close co-operation between the State's great agricultural agencies, it was decided that a separate law should be enacted to provide that the Governor should appoint to the State Board of Agriculture the same men he appointed to be the Trustees of the Maryland State College of Agriculture.

Bills providing for the State Board of Agriculture and the reorganization of the Maryland Agricultural College, and subsequent change of name to the Maryland State College of Agriculture, and the separate law making the personnel of the State Board the same as the personnel of the Board of Trustees of the State College were

introduced in the Assembly at the same time as administrative measures. The powers of the Board of Trustees were broadly defined in the new charter, which guaranteed all the powers necessary to organize an educational institution of the highest type and encompass all fields of learning. The subsequent change from the Board of Trustees and from the name Maryland State College of Agriculture to Board of Regents and University of Maryland, respectively, have already been described.

The general powers of the State Board of Agriculture outlined in the law are:

"The State Board of Agriculture shall investigate the conditions surrounding the breeding, raising and marketing of live stock and the product thereof, and contagious and infectious diseases affecting the same; the raising, distribution and sale of farm, orchard, forest and nursery products, generally, and plant diseases and injurious insects affecting the same; the preparation, manufacture, quality, analysis, inspection, control and distribution of animal and vegetable products, animal feeds, seeds, fertilizers, agricultural lime, agricultural and horticultural chemicals, and biological products; and shall secure information, statistics and results of such investigations at such times and in such manner as to it shall seem best adapted to the efficient dissemination thereof; and except where such powers and duties are by law conferred or laid upon other boards, commissions or officials, the State Board of Agriculture shall have general supervision, direction and control of the herein recited matters, and generally of all matters in any way affecting or relating to the fostering, protection and development of the agricultural interests of the State, including the encouragement of desirable immigration thereto, with power and authority to issue rules and regulations in respect thereof not in conflict with the Constitution and Laws of the State or the United States, which shall have the force and effect of law, and all violations of which shall be punished as misdemeanors are punished at common law; and where such powers and duties are by law conferred or laid on other governmental agencies the State Board of Agriculture and such other governmental agencies may co-operate in the execution and performance thereof, and when so co-operating each shall be vested with such authority as is now or may hereafter by law be conferred on the other. The powers and duties which now are or hereafter may be conferred or laid upon said Board."

The law making the two Boards the same provided "That the present and all future Governors of the State of Maryland be, and they are hereby required and directed to appoint the same persons to the State Board of Agriculture as are appointed to be the Board of Trustees of the State College of Agriculture."

The Board of Trustees of the State Board of Agriculture has since become, of course, the Board of Regents of the University of Maryland.

The University of Maryland

Scope of Educational Organization

Something of the wide field covered by the University is shown by its educational organization:

- College of Agriculture.
- College of Engineering.
- College of Arts and Sciences.
- School of Commerce and Business Administration.
- School of Medicine.
- The Law School..
- School of Dentistry.
- School of Pharmacy.
- College of Education.
- College of Home Economics.
- The Graduate School.
- The Summer School.
- Department of Military Science and Tactics.
- Department of Physical Education and Recreation.
- The Extension Service, including the Agricultural, Home Economics and General Extension.
- The Agricultural Experiment Station.
- The Engineering Research Department, operating as a part of the College of Engineering.

Eastern Branch of the University of Maryland

Each of the above educational units offers to students in its field various kinds of specialized work, as follows:

College of Agriculture: General Agriculture, Agronomy, Farm Management, Geology, Soils, Pomology, Vegetable Gardening, Floriculture, Landscape Gardening, Economic Entomology, Animal Husbandry, Dairy Husbandry. This College also offers a two-year curriculum in Agriculture to give students who have not had a high school education an opportunity to learn the scientific management of a farm.

College of Arts and Sciences: Ancient Languages and Philosophy, Economics, English Language, Literature and Journalism, General Science, History and Political Science, Chemistry, Public Speaking with reference to Special Professions, Zoology and Agriculture, Water Food Resources. Studies also are offered in Music and Library Science.

College of Engineering: Civil Engineering, with opportunities to specialize in either Highway or Sanitary Engineering, Mechanical

Engineering, and Electrical Engineering. The College also has under way research projects in co-operation with the Federal and State Governments.

School of Commerce and Business Administration: Offers at College Park regular four-year curriculum in Business Administration and Commerce, for which the Degree Bachelor of Science is given. It offers in Baltimore three-year extension courses, for the completion of which the degree Bachelor of Commerce is awarded.

College of Education: Organized mainly to train teachers of Agriculture, Home Economics, Industrial Work, and general subjects.

Schools of Medicine, Law, Pharmacy, and Dentistry are for courses leading to the degrees of Doctor of Medicine, Doctor of Dental Surgery, Pharmaceutical Graduate, and Bachelor of Laws.

The Graduate School presents courses in any of the subjects in which graduates may desire an advanced degree. This school is made up of all students taking graduate work in various departments of the University, and their work is directed by the faculty of the Graduate School, which has a research specialist as dean.

College of Home Economics: Offers opportunities for women to develop as Teachers of Home Economics, to obtain a knowledge of the general principles embodied under this head, and a specialized knowledge which leads to positions as dietitians or institutional managers.

All military work in the institution, compulsory under the Land Grant Act and the lately established Reserve Officers' Training Corps, is under the direction of the Department of Military Science and Tactics. Closely affiliated with this department is the work in Physical Education and Recreation.

The Summer School is operated from the latter part of June until the first of August, and presents courses in subjects given during the regular season of the University, with the exception of some in particularly specialized fields. The major portion of the work of the Summer School is devoted to offering opportunities for high school and elementary school teachers to improve their educational qualifications.

Education for Negroes

When the State of Maryland accepted the funds from the United States Government under the Morrill Act, the act made it imperative that educational facilities be provided for negroes. This was accomplished through an agreement with Morgan College, of Baltimore, under which the then Maryland Agricultural College took over control of the branch of that institution at Princess Anne. The University is trying to build there an institution along the same line and high standard as Tuskegee and Hampton.

The details of the work carried on and accomplished in the last two years under the direction of the different educational units will be found elsewhere in this report, the dean of each college or school pre-

senting the record of the work of his organization in his own way. The educational aspects of the various departments of the University will be touched only in a general way and mainly as they affect outside agencies.

Function of State University Education

The biennium covered has been a period of readjustment in education as well as in other lines of business and in other professions. The year 1919-1920 was the first full scholastic year after the armistice; it was necessary to readjust the educational ideas and policies of the institution, to take advantage of the lessons of the war, and at the same time to develop as an adjunct to the more practical side that phase of education usually known as cultural. It must be remembered that during the war the entire higher educational system of the nation was turned toward the practical end of winning the war, and it must be further remembered that any institution of higher education to be entirely successful and to insure proper training for the next generation must be something more than an intellectual factory grinding out learning the sole aim of which is to enable the student and prospective citizen to acquire something which he may sell for dollars and cents.

If education is to fulfill its place in the modern world it must develop those things which tend to build the character of men and to mold their minds in the ways of right thinking and loyalty. Particularly is it the function of State universities and State-controlled education generally to pay special attention to see that the youth of today have inculcated in them the lines of thought which will make them the loyal and right-thinking citizens of tomorrow. In its reorganization scheme the University has endeavored to build its educational system to this end. Primarily, men and women enter college to acquire training which enables them to earn a living, but it is the duty of the colleges and universities to see that students receive training in addition to this which will make it the ideal of all graduates to use their knowledge in a life of service to their communities and to their State and to their nation.

The faculty of the University have co-operated in trying to attain this ideal, and it might be well to say of the faculty also that their spirit during the most disheartening times through which teachers ever were compelled to pass has been splendid. The faculty have shown a sense of loyalty and desire to render service that has been highly commendable. High prices and low salaries have worked real hardships in many cases, but co-operation of Governors Harrington and Ritchie have helped to increase State aid and to give members of the faculty salaries more commensurate with the services they have been rendering.

Establishment of Higher Education

In reorganizing the educational system of the institution it was necessary to bring the teaching in every department up to the standards prescribed by the highest authorities for a standard college. To accomplish this a Committee of Standards was appointed and a general investigation of teaching methods, with special aim to improve them, was begun. The result has been that the University now has a standard Arts and Science College, and its standard in general technical and professional education is recognized as among the best. In a recent list of standard and secondary schools of the Middle Atlantic States and Maryland the University was one of the three institutions in Maryland recognized as a standard college. So effective has been the work of the Committee on Standards that it will be continued as a means of maintaining a highly efficient educational organization.

One of the very great problems which faced the University at the close of the war was the readjustment of its student body to new living conditions. During the war period the Student Army Training Corps, while an admirable organization for the period and purpose, introduced many things to students which theretofore had not been known so generally, and held them under strict military discipline at all times. The problems of realigning the students to the more prosaic university life was much more difficult than one not familiar with the situation would expect. Considerable time and study was given to the situation and, happily, a successful solution to the problem was found and much of the trouble and laxity experienced in other places was not encountered. In accomplishing this the students themselves were taken into full confidence by the administrative authorities of the University, and student co-operation in general has been splendid. The student body has been on a normal basis now for practically a full year.

Co-operation with Public School System

Any State owned and controlled higher system of education must be in close touch with the State's general system of public education. In order to insure the closest co-operation between the public school system and the University, administrative authorities of each have been in almost constant touch. The Superintendent of Education, Albert S. Cook, has consulted the University in many things in relationship to policies and the University has endeavored to orient its work with the schools in ways suggested by Dr. Cook. It also has depended upon Dr. Cook and his organization for much valuable advice in building some of its lines of work so that it might render the greatest service and help to the public schools. In the reorganization plan for the State's administrative agencies proposed by Governor

Ritchie the whole policy in regard to State-controlled education, both secondary and university, is worked out under the Governor's direction by the University and the State Board of Education in co-operation.

The establishment of the Federal Board of Vocational Education, since operating under the United States Veterans' Bureau, for education and rehabilitation of slightly incapacitated soldiers, led to a co-operative agreement under which the University undertook to train men entitled to such training under the Federal Act establishing the board. Few of these vocational students have been able to enter the regular University classes, but special training for which the United States Veterans' Bureau is supplying teachers has been provided.

Agricultural Work on High Plane

The general work of the institution in agriculture has been closely co-ordinated and probably now is working on as good a basis as in any other similar institution. The work of the Experiment Station, the Extension Service and the College teaching have been fully co-ordinated. The agricultural teaching is being done with two main aims. The first, to develop a more intelligent system of farming by training better farmers; the second, to build up the farming industry by educating men to provide a corps of trained experts to render indirect and direct service to the rural communities through research and extension.

Research in Engineering

The Hatch and Adams Acts of the Federal Congress gave to the Land Grant colleges opportunities to do real work in research and to provide a solid basis on which a permanent and more effective agriculture could be built and it has been the aim of practically all such institutions to establish a similar experiment station for engineering—engineering having been made co-equal with agriculture in the Morrill Act. The University has been able to get under way engineering research in co-operation with the State Roads Commission and the United States Bureau of Public Roads. The work thus far has been confined almost entirely to highway research, but is to be broadened as funds will allow. The general work of the Engineering College has been completely reorganized under the direction of A. N. Johnson, new dean, to fit the needs of the time.

Development of Student Life

One of the great problems connected with the university of today is the development of student life, intelligent use of the hours of recreation and a general surrounding of the student with habits of good living. While it has no adequate physical facilities for such things the University has put into operation comprehensive plans for inter-

collegiate and intramural sports, literary societies, dramatic clubs, music clubs, fraternities, student self-government, publications and a series of lectures and other activities in order to give every student some extra curricula activity in which he may take part. The value of the contacts which students form in taking part in such activities, if intelligently planned, is almost incalculable. All such recreational work is handled by a joint committee of faculty and students. There has been developed a splendid spirit of co-operation.

Education in Medicine, Dentistry, Pharmacy and Law

The Medical School and the hospital have been partly reorganized more nearly to meet the requirements of the State. They are rated as Class A and are fulfilling their functions so well that their absence would leave the State without adequate facilities for educating medical practitioners and nurses and would work a real hardship, especially in the rural sections of the State. The school is greatly in need of funds for buildings and equipment. The same is true of the Pharmacy and Dental Schools. Through commendable private effort enough money was raised to build the first unit of a modern nurses' home. This is now in process of construction.

In the teaching of law it is peculiarly within the province of the State to see that proper standards are adhered to. The State should maintain in its State University a law school; and the University of Maryland Law School has well fulfilled this function for Maryland. Plans for improving the work of this school are now under consideration.

Co-operation with the War Department in reorganization of the Reserve Officers' Training Corps Unit established in 1917 and disrupted by the war has been completed. There are now at the University one major, three captains and three sergeants, who are handling the work of the Department of Military Science and Tactics. These men have shown a splendid spirit in trying to build the military work as a part of the general educational system of the institution, and have succeeded in making it something vastly more than a matter of ordinary drill.

The University has been co-operating with the National Research Council, an educational organization, as its name implies, of nationwide scope, organized in 1916 at the request of President Wilson to foster research education and to pool the research thought of the nation. This association of the University with the educational agencies of country-wide note has given the University broad contacts in matters of research that could have been obtained in no other way.

Corporation with State Agencies

In Governor Ritchie's reorganization plan for the State Government the State Board of Forestry and State Weather Service, and

the State Geological and Economic Survey are tentatively placed under the Board of Regents of the University so as to bring about a fuller co-ordination of the agencies which have to deal with the development of the State's resources. Already the University has been co-operating with these organizations. Under the act providing for the State Board of Forestry, the President of the University is a member of the Board and the State Forester is lecturer on forestry in the University. A forest nursery is being maintained at College Park, and is being enlarged as rapidly as funds become available. The President of the University also is a member by law of the board which controls the work of the State Geological and Economic Survey. Much work in the survey of soils has been done by the University.

The work of these two Boards is of great interest and relates closely to the development of agriculture in the State. There are thousands of acres of land that can be more profitably devoted to forestry than to any other use. The information secured in soil surveys is essential for the formulation of plans for the economical use of soils and permanent agriculture.

The State Weather Service was established in 1892, and under the law one of the three members of its board of control is designated by the University. In addition to minor reports and circulars, the Weather Service has published three large volumes of reports of great scientific and practical value, the last being a report of a botanical survey of Maryland and a study of the flowers of the State as affected by climate and soil. In the preparation of this report the Weather Service has received able assistance from the scientific staff of the University. It is interesting to note that the first Secretary and Treasurer of the State Weather Service was Dr. Milton Whitney, who was connected with the Agricultural Experiment Station, and who while at College Park began the soil investigation which has since grown to such widespread proportions.

Work with Conservation Commission

The great demands for sea-food on the State's public waters and the consequent depletion of these foods, particularly the oyster, has resulted in great efforts by the Conservation Commission to facilitate the growth and conserve the supply. The University, through its Department of Zoology and Agriculture, has placed its scientific and practical workers at the service of the Commission and the United States Bureau of Fisheries in co-operation. Investigations have been conducted in co-operation with both through three seasons and the data turned over to the Conservation Commission to use in the development of its rehabilitation projects in the Chesapeake Bay.

The necessity of returning shells to the natural oyster beds has not only been established by the University, but the possibilities of stimulating growth have been demonstrated through experimental plantings.

In addition to the development and conservation of the beneficial "wild life," for food and fur bearing purposes, the importance of fostering those of indirect value is exceedingly great, as in the case of insect-destroying birds. Also, the development of lowlands offers great possibilities. Much of this type of land is to be found in Maryland where the water levels could be maintained for fish culture and thus bring thousands of acres of waste land into profitable use. The development of old waste land into profitable fisheries is almost as large a possibility as the development of waste land for agriculture; and already the United States Bureau of Fisheries and the University have formulated a proposal for an experimental fishery at College Park to show what can be done along this line.

Close co-operation of the University with the Conservation Commission is very necessary, as the aims of the two organizations are the same—conservation and development of the State's resources. The University aims eventually in proposing to establish experimental fish ponds to prove the possibilities of practical fish farming, and at the same time augment the supply of the Conservation Commission of small fish for public distribution.

It has been claimed that the campus of every State university is the State, and with the wide reaching extension work carried on in most of the States either by the State universities or State colleges, this practically is true. The extension work of the University of Maryland reaches into every section and every county in Maryland, and its co-operative work through demonstrations, lectures and personal advice in helping women in their homes, the farmers to produce more at less comparative cost, and in co-operative work in the schools, and providing direct contact between the cities and the counties is rendering splendid service to the people at large and to the business interests.

While the apparent function of an educational institution is educational development, and that is the function with which the public comes most in contact, it is necessary in order to facilitate matters pertaining to the various and several lines of work to possess a complete business organization. This involves at the State University a financial and business office, a registrar's office, a purchasing office, a general service department, a postoffice, mailing and publications departments, student supply store, and dormitory management. The financial work of the University is divided into two parts, it having been found better to confine the financial work at College Park to the funds relating to the educational departments located here, with the finances of the schools in Baltimore handled separately at an office located in the Medical School. The finances are being handled in co-operation with the office of the State Comptroller. The State Comptroller's office has been exceedingly courteous and has aided in all difficulties that have arisen. The General Service Department takes care of buildings, looks after the heat, water, gas, transporta-

tion, mail and telephone service, and helps to supervise new construction.

A formal report of this kind can only in small measure place before the public the extent of the activities on the University campus and the great amount of work and activities in which it is directly and indirectly interested. One cannot hope to show anything like the broad scope of the influences exerted in the various communities of the State and on the life of the State as a whole. Suffice to say, that there is no other factor through which the State can hope to work so well to develop leaders for its industries and to insure the building up of its agricultural life; and there is no other medium through which it can so well inspire its future leaders with the ideal of service to the people as a whole and a whole-hearted spirit of loyalty to the commonwealth.

ADDITIONS TO PLANT AND INSTALLATION OF MACHINERY OF VARIOUS KINDS

The last Legislature appropriated \$203,000 to be used to pay the deficit on the Agricultural Building constructed in 1917 and for general repairs, and to erect small dormitories for men and women. While it was the original intent to expend all the money available for dormitory building purposes for men's dormitories, the demand for dormitory facilities to take care of girls was so great that it was necessary to split the funds somewhat, providing a small residence for this purpose. The two main buildings erected out of the fund were the men's dormitory, named for Dr. R. W. Silvester, who played such a prominent part in the development of the old Maryland Agricultural College, to house 132 men, and a residence to take care of 15 girls.

Following is a statement of the expenditures of this money:

Allotment to University of Maryland from bond issue	
not deducting cost of selling bonds.....	\$203,000.00

RECEIPTS

Received from Board of Public Works.....	\$166,108.37	
Interest on bank deposits.....	78.15	
	<hr/>	\$166,186.52

EXPENDITURES

Approved contractors' claims and interest	
on agricultural buildings built in 1918	\$22,913.22
Eastern Branch, University of Maryland	3,813.05
Filtration Plant, College Park.....	3,955.35
General layout plans, College Park.....	2,000.00
Equipment for dormitories.....	12,200.00
Work on women's dormitories.....	800.00

Refinishing floors, Calvert Hall.....	500.00	
Additions to Gerneaux Hall.....	2,250.00	
Additional boiler in power plant.....	600.00	
Consolidated Engineering Co., dormitories M. F. and G.....	106,126.04	
Turner & Thomas, fire insurance, dormi- tories M. F. and G.....	736.75	
O. D. Howell, salary as clerk of works, dormitories M. F. and G.....	1,400.00	
Flournoy & Flournoy, architects, dormi- tories M. F. and G.....	7,237.06	
Chas. L. Reeder, consulting engineer, dor- mitories M. F. and G.....	1,576.90	
Cash on hand, interest on deposits.....	78.15	
		<hr/>
		\$166,186.52
Received from Board of Public Works and disbursed as per statement above.....	\$166,108.37	
Interest on bank deposits.....	78.15	
Balance due from Board of Public Works, to be used in payment of balances due contractors and others, and to allow for proportionate share of cost of selling bonds	36,813.48	
		<hr/>
		\$203,000.00

NEEDS OF THE UNIVERSITY AND STATE BOARD OF AGRICULTURE AS SUBMITTED TO GOVERNOR RITCHIE

In considering the needs of the University we must constantly keep in mind that it is a part of the public school system, subject to no control except that of the public. As such, it must articulate with the other schools of the system and co-operate with them in every way. The benefits of the University must not be reserved for a favored few, but must be available to all who are prepared and who desire to avail themselves of the opportunities offered. Government aid is given to the State universities in order that higher education may be available to all who are prepared to profit by it and as free from sectarian, political or economic bias as the public schools generally. They are, therefore, the agencies of intellectual democracy. They must maintain the highest standards of work and render a service recognized as equal to the best in the privately endowed and controlled schools. Men and women trained in the State schools must be able to compete on equal terms with those trained in the private schools. This is certainly true of such schools as California, Nebraska, Missouri, Iowa, Minnesota, Wisconsin, Michigan, Illinois, Ohio and others of this class. It should be true also of the University of Maryland.

The University of Maryland as a State institution is young. It is made up, however, by the consolidation of several of the oldest and most honorable colleges in the United States. For many years these have received some State aid, but very little compared with the State-owned colleges of other States. To develop the University to meet the present needs of the State and to enable it to render service up to the standard demanded of such institutions, the State must, in a measure, make up for past neglect and make a large initial investment in personnel, equipment and plant. It does not pay to adopt half-way measures in work of this kind. The large dividends come from having the best there is to have. Maryland will be satisfied with nothing less. The field covered by the University must be as broad as the diversified needs and important interests of the State, so far as it is desirable and necessary for the State to provide for them. A careful study of the work in progress and the plans for enlargement will show that this ideal has been lived up to.

The University has grown rapidly since it was taken over by the State. The work at College Park has more than doubled in the past two years. The student body has increased from 175 to 625 and many have been turned away. There has been no corresponding increase in the faculty or equipment. The rapid development of the Extension Service, the Smith-Hughes work in co-operation with the State Department of Education, the Horticultural Inspection, Fertilizer and Feed Control, Live Stock Sanitary Control, Tuberculosis and Hog Cholera Eradication, Marketing, Organization, etc., have drawn heavily on the University, as well as on the Extension Service and the Experiment Station. It all helps, however, to bring the various branches of the University into close touch with the needs and industries of the State and into helpful relation and co-operation with other branches of the State and National Government. The total cost handled in this co-operative way is much less.

To meet this situation and enlarged need, there should be added to the staff, professors, assistant professors, instructors, clerks and labor amounting to \$109,950 a year and salary increases of officers amounting to \$6,970, faculty \$41,310, clerks \$4,455 and labor \$15,290, or a total increase for staff additions and increases of salaries and wages amounting to \$177,975. The salary increases are made on the basis of the average paid for similar work in other institutions of this class, as determined by the U. S. Bureau of Education. We cannot secure nor keep competent teachers or labor on any other basis. It is difficult to do so on the basis of the average wage. An increase of \$80,418.11 is to provide only for the most meagre needs which have never thus far been provided for properly. This makes a total required annually for maintenance of the colleges at College Park of \$423,870, in addition to the miscellaneous receipts from the Government and other sources, not including needs for buildings, land and permanent equipment or the requirements of the Experiment Station, Extension Service or other non-teaching branches.

Following are the specific needs of the University units:

Executive Expenses

Part of the salary of the President as executive officer of the Board of Regents and Board of Agriculture is paid from this fund, as well as rent and office expenses of the Board in Baltimore, and traveling expenses of the Board in attending meetings. The amount of this item remains the same, viz., \$5,000 annually.

Extension Service

This service carries to the farms and farm homes the latest information on agricultural methods, control of disease and insect pests, organization for community improvement, production and marketing. The service has been highly successful and there is urgent need and demand on the part of the farmers for its enlargement. It will require \$46,287.11 to meet the Federal appropriation.

The General Extension Fund of \$5,000 now available for the general work of the service is far from sufficient to meet urgent needs that cannot be paid from the co-operative funds. This fund should be increased to \$20,000 annually.

The County Demonstration Fund should be increased from \$48,000 to \$78,000 annual. A considerable part of the field expenses of the men and women agents, including a part of their salaries, are paid from this fund.

The demands on the service for information and demonstrations on improved marketing methods, including grading and packing and organization for this purpose, are urgent. A special branch of the service should be organized for this purpose. At least \$25,000 a year should be available.

Nursery inspection, bee inspection and orchard demonstration work in controlling diseases and insects is essential to the development and protection of these important branches of Maryland horticulture. The \$8,000 now available is entirely too little to enable us to do what is demanded and needed in this field. Not less than \$30,000 annually should be available. The work accomplished yields large financial returns, increasing the longer the work is continued.

Experiment Station

The advance of American agriculture has been due mainly to the research of the National Department of Agriculture and the State Experiment Stations, financed in part by the Federal Government. The work already accomplished by the Maryland Agricultural Experiment Station in the improvement of grain crops, forage crops, potatoes and tobacco are yielding an average increased return annually of over twenty-two million dollars. Another million can be

added for work on fruits and vegetables, and there is much yet to do. Every dollar efficiently expended in research will yield from 100 to 1,000 per cent. annually indefinitely. We cannot afford to neglect research, fundamental to agricultural and industrial development. Many important projects are held in reserve waiting for funds. The present appropriation of 41,900 must be increased to \$122,200 annually to make the work efficient. This covers a large number of urgent problems, the solution of any one of which would pay the entire cost of all the work for many years. As pointed out above, the work already accomplished pays in one year ten times as much as has been spent on the University, Station and Extension Service in fifty years. Can we afford to make these investments?

Biological Laboratory

This laboratory, in connection with the Live Stock Sanitary Service, makes and distributes serums and other biological products for the prevention and control of hog cholera, tuberculosis, glanders, etc. The increased demands on this laboratory require an increase of \$2,500 a year, making a total available of \$8,000 annually.

Seed Inspection

The loss coming from the use of impure seed or seed of low vitality is very great. The Seed Control Laboratory carries out the requirements of the Seed Control Act and protects the farmers and seedsmen from fraud. It pays for itself many times over in better crops every year. An increase of \$3,700 is needed, making the total available annually \$10,700.

Ridgely Farm

This is a field experiment station on the Eastern Shore. While valuable work has been accomplished, we believe that more good could be secured if the money invested could be used for general field investigation work. If the work is continued it will require the same as now available, \$5,000 a year.

Live Stock Sanitary Section

This work is organized in close co-operation with the Animal Industry Departments of the University, Experiment Station and Extension Service. This is the most economical and effective way of handling it. The amount available this biennium is \$46,400 annually. This is not sufficient to enable us to keep as close watch of the contagious diseases of live stock as the importance of our live stock industry requires. An increase of \$8,000 a year is needed, making the total available for the general work of the service \$61,150 annually.

In addition to this, the Hog Cholera Eradication work, in co-opera-

tion with the United States Bureau of Animal Industry, will require \$12,000 a year, an increase of \$2,000.

The Tuberculosis Eradication, in co-operation with the United States Bureau of Animal Industry, will require at least \$100,000 annually, and more could be used to advantage. The little State of Delaware has appropriated \$300,000 for this purpose. The United States Government puts up dollar for dollar. Fifty thousand dollars, in addition to the \$100,000 new work, will be needed the first year to cover the accrued liabilities authorized.

The law establishing the State Board of Agriculture and the Live Stock Sanitary Laws require the board to maintain a dairy inspection service, but it has not been possible to do this for lack of funds. For this purpose \$29,600 a year should be available.

State Dairymen's Association

This is a fund appropriated for general dairy extension purposes. It is supplemented by money appropriated from the State Dairymen's treasury and is used to study and improve dairy conditions in the State. It should be continued.

Deficiency in Interest

This is an item required to make up the interest that must be credited to the Morrill funds to make the annual return on the investment of these funds 5 per cent., required by terms of the Federal Act.

Eastern Branch

In accepting the Federal Land Grant of 1862 the State obligated itself to maintain a college of agriculture and mechanic arts for colored people as well as white. Ten thousand dollars of the Federal grant of \$50,000 annually goes for this purpose. This must be supplemented by State funds, and the State is obligated to provide land, buildings and equipment. This has been done by entering into co-operation with Morgan College, by which their plant at Princess Anne is used for this purpose. The State at the last Legislative session provided some additional land and \$5,000 for a barn and other improvements, and \$12,420 for general expenses. This should be doubled if the work is to be put on an efficient basis. Additional land and buildings needed will be referred to later. The amount needed for expenses annually is \$19,620, in addition to that available from other sources.

Medical School

The supply of rural physicians and nurses for Maryland must depend largely on the Medical School and Hospital and Nurses' School of the University of Maryland. This has been true in the past and

it will be more so in the future. The Medical School proper needs about \$300,000 a year for efficient work. About one-third of this should come from the State appropriations. The School now receives \$42,500. This should be increased to \$82,500 annually.

The Hospital requires about \$300,000 annually. At present the State provides no regular appropriation. Sixty thousand dollars in addition to that available from other sources is needed.

School of Pharmacy

The demand for trained pharmacists in Maryland is greater than the supply. It is important to the welfare of the State that these men receive a thorough training. The dispensing of drugs and medicines is of vital importance. The State heretofore has done nothing for the School of Pharmacy. The amount required will never be large, but it should be adequate for efficient work. We are asking \$10,000 a year for the next two years.

School of Dentistry

The need in all parts of the State of maintaining the supply of well-trained dentists is almost, if not quite, as important as the medical problem in this respect. The School of Dentistry is the agency which must be depended on to accomplish this. Eventually \$30,000 a year should be available for this, in addition to funds available from other sources. For each of the next two years we are asking for \$10,000.

Law School

The income of the Law School is sufficient to meet its present needs. When it is reorganized on a standard basis the fees will need to be supplemented, but this will not be undertaken during the next two years.

School of Commerce

The School of Commerce is a new school, organized at the request of leading business men of Baltimore for the purpose of giving opportunities to qualified employes of increasing their efficiency. Like the Law School, it is at present self-supporting and no request for funds is made, other than the fees charged for the work, which are levied with a view to covering the cost.

Land Use and Economic Research

The request for an appropriation of \$25,000 for a Department of Economic Research in the Graduate School, is included at the suggestion of representatives of the United States Department of Agriculture, with a view to making a careful study of the problems of land settlement and use which are acute at the present time. This work

will be conducted with the co-operation of the United States Department of Agriculture and the Institute of Economic Research, a new organization which will be affiliated with the Graduate School of the University of Maryland. The central office will be located at College Park while the research laboratories, libraries and special facilities are available in Washington.

Buildings and Permanent Equipment

The urgent needs of the University for buildings and permanent equipment are large. The State has expended altogether, including the buildings belonging to the Medical and other schools in Baltimore, in a period of fifty years, only about 63 cents per capita for building up its university; whereas, other States having institutions with no greater responsibility have expended from \$3 to \$15 per capita. Maryland cannot, of course, correct this situation at once. The original program approved by the Board of Regents for the next biennium has been carefully restudied and everything that can possibly be deferred has been eliminated in view of the critical financial situation in the country. It is the belief of the Board, however, that the items here included are urgently needed to meet the situation as it now exists. While the sum is still quite large, it is an investment which will give large returns to the State and we urgently request that provision be made for these items. Many important items, amounting altogether to approximately \$1,500,000, have been deferred. The dormitory and classroom equipment, even with the additional added this year, does not begin to meet the requirements of the institution, which is now over three times as large as it was when taken over by the State, excluding the added schools at Baltimore.

Men's Dormitory, Women's Dormitory, and Four Six-Room Dwellings

The cost of living outside the institution is so great that many students who desire to come cannot do so on that account. A large number were turned away last year and a larger number this year, due to the lack of classroom and living facilities. To meet this need, we require a men's dormitory, a women's dormitory and four six-room dwellings.

Dining Hall, Cold-Storage and Ice Plant

The present dining hall is of temporary wood construction, part of it being erected during the war. It is a vertiable firetrap and is in no way adequate to meet the needs of the institution.

Gymnasium, Armory and Athletic Field

Proper physical training is essential to the health of the students and the military drill is a part of the obligation of the State in the acceptance of the Land Grant Act. The Government is furnishing

instructors and equipment and the State is expected to furnish the necessary building facilities for proper physical and military work. This cannot be done without the construction of a building, the need for which has now been presented for the past six years.

Chemical and Scientific Building

The Chemical and Science building has for several years been inadequate to meet the needs of the situation. The work has overflowed into a part of the Animal Department, which is itself in urgent need of the room. The Chemical and Science building cannot, therefore, be longer deferred.

Garage and Repair Shop

The distance from Baltimore and Washington and the fact that we have to haul all of our coal and supplies a considerable distance over bad roads necessitates the use of a number of motor trucks. At present we have no place to keep these and a suitable garage and repair shop, inexpensive in construction, is urgently necessary.

Dairy and Animal Husbandry Farm

The Dairy and Animal Husbandry Departments at present are using very meagre equipment owned by the Experiment Station. The farmers and dairymen of the State have for many years urged that this situation be corrected. It cannot be done without additional land, and a Dairy and Animal Husbandry Farm is, therefore, requested. On this farm the first section of a Dairy Manufacturing Laboratory should be erected, in addition to the barns and live stock. These items have been figured to the lowest possible cost for the requirements of the situation.

Lighting Grounds, and Water and Sewer Connections

At the present time the grounds are very inadequately lighted and with a population of over 600 students it is undesirable and unsafe to continue this condition. An item of \$15,000 is, therefore, urgently necessary. The same is true of water and sewer connections, for which an item of \$40,000 is included.

Engineering Building

The Engineering College at College Park is the oldest one in the State. It is a part of the Land Grant educational requirement and has given special attention to those features of engineering relating to the needs of rural life; like highway engineering, drainage, power, light, mechanical engineering, etc. In connection with the Engineering College, experimental work in roads and road material has been

conducted in co-operation with the State Roads Commission and the United States Bureau of Public Roads. This work is assuming very great importance to the State and additional space and laboratory equipment is urgently necessary. An item of \$100,000 for enlarging the buildings and \$32,500 for equipment is included.

Greenhouses, Etc.

In the Horticultural Department additional greenhouse facilities are urgently necessary for the purpose of conducting the practical teaching and demonstration work. An item of \$28,300, including the construction and equipment is included for this purpose.

Miscellaneous Equipment

An item for miscellaneous equipment for the Agricultural Building, Live Stock Pavilion, Meat Curing Laboratory, Advanced Dairy Testing Laboratory and Bacteriological Laboratory, amounting to \$27,500, is urgently necessary to provide proper instructional facilities.

General Repairs

An item of \$20,000 for general repairs is included, which will barely put the present buildings in the proper state of repairs.

New Truck

A new truck, estimated at \$3,500, is necessary to replace one of our coal trucks which has now been in operation for three years and is becoming expensive to operate on account of excessive repairs necessary.

Medical School Equipment

It is necessary to provide additional microscopes and other laboratory equipment to replace that worn out, and to meet the needs of about fifty additional students who are now registered for the work.

University Hospital Equipment

An item of \$25,000 is included for the purchase of an X-ray machine, laundry machinery, sterilizing apparatus, hot-water tank, mattress sterliizer, ice machine, and laboratory equipment. All of the above are urgently needed, as the present equipment is old and worn out. The equipment requested will have to be furnished if patients are to be properly taken care of.

Nurses' Home Equipment

The first unity of the Nurses' Home is now being constructed on money raised by subscription. About 12,000 of the amount raised had

to be used to purchase adjoining lots for the protection of the Home and the Hospital, and, owing to the unusually hard times, it is possible that about 10 per cent. of the amount pledged may not be secured. The need for nurses in the hospitals in the State is most urgent, and we desire that there be no delay in the completion and occupancy of the building. We, therefore, request an item of \$25,000 for the completion and equipment of the building.

Land and Buildings at Eastern Branch

The Eastern Branch is being organized especially as a school of agriculture for colored people, with the co-operation of the United States Bureau of Education. In connection with the plant a general classroom and laboratory building is essential and was requested two years ago. We secured, however, a small appropriation for a portable building, which we will endeavor to use for the next two years. The most urgent needs at the present time are greater facilities for giving the students practical work, and these constitute especially additional greenhouses and poultry houses, for which an appropriation of \$5,000 is requested. We also need additional land, which it is believed can be secured adjoining the institution for \$20,000.

UNIVERSITY OF MARYLAND

Summary of Budget, 1923-1924—State Appropriations

	Maintenance	Buildings	Equipment	Land	Total for Biennium
College Park	\$1,612,209.10	\$1,062,500.00	\$201,800.00	\$57,000.00	\$2,934,009.10
Baltimore Schools	325,000.00	.....	75,000.00	.....	400,000.00
Live Stock Sanitary	455,500.00	.....	.....	.....	455,500.00
Eastern Branch	39,240.00	5,000.00	.....	20,000.00	64,240.00
Grand totals	\$2,431,949.10	\$1,067,500.00	\$276,800.00	\$77,000.00	\$3,853,749.10

2.4

1.3

UNIVERSITY OF MARYLAND

Summary by Funds of Requested Appropriations for Biennium 1923-1924

	Amount Requested 1923	Amount Requested 1924	Total for Biennium
General University:			
Maintenance	\$423,870.00	\$423,870.00	\$
Buildings	1,062,500.00	.....	.....
Equipment	201,800.00	.....	.....
Land	57,500.00	.....	2,169,540.00
Executive Expenses.....	5,000.00	5,000.00	10,000.00
Deficiency in Interest.....	2,047.44	2,047.44	4,094.88
Land Use and Economic Re- search	25,000.00	25,000.00	50,000.00
State Fund.....	122,200.00	122,200.00	244,400.00
Biological Laboratory.....	8,000.00	8,000.00	16,000.00
Seed Inspection.....	10,700.00	10,700.00	21,400.00
Ridgely Farm.....	5,000.00	5,000.00	10,000.00
State Smith-Lever.....	46,287.11	46,287.11	92,574.22
County Demonstration.....	78,000.00	78,000.00	156,000.00
General Extension.....	20,000.00	20,000.00	40,000.00
State Horticultural Dept..	30,000.00	30,000.00	60,000.00
Marketing Fund.....	25,000.00	25,000.00	50,000.00
Live Stock Sanitary.....	252,750.00	202,750.00	455,500.00
Eastern Branch:			
Maintenance	19,620.00	19,620.00	.....
Land	20,000.00	.....	.....
Buildings	5,000.00	.....	64,240.00
School of Medicine:			
Maintenance	82,500.00	82,500.00	.....
Equipment	25,000.00	.....	190,000.00
School of Pharmacy.....	10,000.00	10,000.00	20,000.00
School of Dentistry.....	10,000.00	10,000.00	20,000.00
University Hospital:			
Maintenance	60,000.00	60,000.00	.....
Equipment	25,000.00	.....	.....
Equipment for Nurses'			
Home	25,000.00	.....	170,000.00
State Dairymen's Ass'n...	5,000.00	5,000.00	10,000.00
Totals.....	\$2,662,774.55	\$1,190,974.55	\$3,853,749.10

26

UNIVERSITY OF MARYLAND

Summary of Buildings, Equipment and Land for Biennium 1923-1924

	Maintenance for 1923	Maintenance for 1924	Total for Biennium
College Park:			
General University.....	\$423,870.00	\$423,870.00	\$847,740.00
Executive Expenses.....	5,000.00	5,000.00	10,000.00
Deficiency in Interest....	2,047.44	2,047.44	4,094.88
State Fund (Exp. Sta.)..	122,200.00	122,200.00	244,400.00
Biological Laboratory....	8,000.00	8,000.00	16,000.00
Seed Inspection.....	10,700.00	10,700.00	21,400.00
Ridgely Farm.....	5,000.00	5,000.00	10,000.00
State Smith-Lever.....	46,237.11	46,237.11	92,574.22
County Demonstration....	78,000.00	78,000.00	156,000.00
General Extension.....	20,000.00	20,000.00	40,000.00
State Horticultural Dept.	30,000.00	30,000.00	60,000.00
Marketing Fund.....	25,000.00	25,000.00	50,000.00
State Dairymen's Ass'n..	5,000.00	5,000.00	10,000.00
Land Use and Economic Re- search.....	25,000.00	25,000.00	50,000.00
Total Maintenance, College Park.....	\$806,104.55	\$806,104.55	\$1,612,209.10
Live Stock Sanitary:			
Including Hog Cholera Eradication, Tuberculo- sis Eradication and In- demnity Fund, and Dairy Inspection.....	\$252,750.00	\$202,750.00	\$455,500.00
Baltimore Schools:			
Medical School.....	\$82,500.00	\$82,500.00	\$165,000.00
Pharmacy School.....	10,000.00	10,000.00	20,000.00
Dentistry School.....	10,000.00	10,000.00	20,000.00
Hospital	60,000.00	60,000.00	120,000.00
Total Maintenance, Baltimore.....	\$162,500.00	\$162,500.00	\$325,000.00
Eastern Branch, Princess Anne.	\$19,620.00	\$19,620.00	39,240.00
Grand Total for Maintenance..	\$1,215,999.55	\$1,165,999.55	\$2,431,949.10

UNIVERSITY OF MARYLAND **Summary of Building, Equipment and Land Requests for the Biennium—1923-1924**

	Buildings	Equipment	Land	Total for Biennium
College Park:				
Men's Dormitory.....	\$150,000.00	\$15,000.00	.....	\$165,000.00
Women's Dormitory.....	50,000.00	10,000.00	.....	60,000.00
Four 6-room Dwellings.....	25,000.00	3,000.00	.....	28,000.00
Dining Hall, Cold Storage and Ice Plant.....	175,000.00	25,000.00	.....	200,000.00
Gymnasium, Armory and Athletic Field.....	200,000.00	10,000.00	.....	210,000.00
Chemical and Science Building.....	175,000.00	25,000.00	.....	200,000.00
Garage and Repair Shop.....	10,000.00	5,000.00	.....	15,000.00
First Section of Dairy Manufacturing Laboratory.....	50,000.00	15,000.00	.....	65,000.00
Lighting Grounds.....	15,000.00	.....	.....	15,000.00
Water and Sewer Connections.....	40,000.00	.....	.....	40,000.00
Six Barns.....	28,500.00	26,000.00	.....	54,500.00
Alterations and Engineering Building.....	100,000.00	32,500.00	.....	132,500.00
Greenhouses, etc.....	24,000.00	4,300.00	.....	28,300.00
Miscellaneous Equipment.....	.....	27,500.00	.....	27,500.00
General Repairs.....	20,000.00	.....	.....	20,000.00
New Truck.....	.....	3,500.00	.....	3,500.00
Purchase of Additional Land.....	.....	.....	50,000.00	50,000.00
Purchase of Vaccine Plant.....	.....	.....	7,500.00	7,500.00
Total College Park.....	\$1,062,500.00	\$201,800.00	\$57,500.00	\$1,321,800.00
Baltimore Schools:				
Medical School Equipment.....	.....	\$25,000.00	.....	\$25,000.00
Hospital, Equipment.....	.....	25,000.00	.....	25,000.00
Nurses' Home, Equipment.....	.....	25,000.00	.....	25,000.00
Total, Baltimore.....	.....	\$75,000.00	.....	\$75,000.00
Eastern Branch, Princess Anne:				
Greenhouses and Poultry Houses.....	\$5,000.00	.....	\$20,000.00	\$5,000.00
Purchase of Land.....	.....	.....	.....	20,000.00
Total, Eastern Branch.....	\$5,000.00	.....	\$20,000.00	\$25,000.00
Grand Totals.....	\$1,067,500.00	\$276,800.00	\$77,500.00	\$1,421,800.00

*To the President of the University,
College Park, Md.*

Sir: I submit herewith a detailed report of the financial operations of those activities of the University located at College Park, Princess Anne and Ridgely for the biennial period ended September 30th, 1921. A condensed statement of receipts and expenditures prepared by the Comptroller of the Schools of Medicine, Law, Dentistry, Pharmacy and Commerce, located at Baltimore, follows Table No. 16 of this report.

With the co-operation of all departments in limiting expenditures to absolute necessities we were enabled to close the biennium with practically no outstanding liabilities and with but a small overdraft in the general University account. Bills receivable will more than balance this deficit. The overdraft in the Station Farm account will be taken care of by future sales of farm produce. The credit balances in the Federal funds are explained in a paragraph following table No. 11.

The Accounting Department has met with many difficulties during the last year of the biennium in adjusting its system to meet the requirements of the State Budget law, the Central Purchasing Bureau and the Civil Service Commission. Much confusion and duplication of records has been unavoidable because of conflicting State and Federal rules and regulations governing expenditures. It is expected that a uniform classification of expenditures for Government and State funds will be allowed which will greatly reduce the present volume of work.

No additions to the personnel of the Accounting Office have been made during the biennium, and the force is much smaller than that of other institutions where an equivalent volume of work is handled. Many valuable and interesting statistics have been held up pending a force adequate to put them in shape for future reference. Only the essential, current records can be taken care of with the present force.

All accounts have been audited by State and Federal auditors. The records under the Government funds have been passed by the Federal auditors, with no recommendations for changes in present methods. The State Auditor has not yet reported on his audit.

Respectfully submitted,

MAUDE F. McKENNEY,
Financial Secretary.

TABLE No. 1

RECAPITULATION OF CASH RECEIPTS AND EXPENDITURES OF THE GENERAL UNIVERSITY-EXPERIMENT STATION AND EXTENSION SERVICE, COLLEGE PARK, MARYLAND, FOR THE BIENNium ENDING SEPTEMBER 30TH, 1921

(See following statement for Baltimore Schools.)

	Expenditures 1919-1920	Expenditures 1920-1921	Total for Biennium	Receipts 1919-1920	Receipts 1920-1921	Total for Biennium	Dr. Balance Sept. 30, 1921	Cr. Balance Sept. 30, 1921
General University	\$348,586.55	\$492,198.23	\$840,784.78	\$323,517.88	\$514,167.62	\$837,685.50	\$3,099.28	\$37,775.16
Morrill-Nelson Fund	39,598.51	39,724.97	79,323.48	77,098.64	50,000.00	127,098.64		
State Board of Agriculture Executive Expenses	5,000.00	5,200.13	10,200.13	5,900.00	5,200.13	11,000.13		
Federal Smith-Hughes	5,710.63	6,978.15	12,688.78	4,463.55	6,753.48	11,217.03	1,471.75	
Filtration Plant	6,989.04	3,042.06	10,031.10	6,058.25	3,955.35	10,013.60	17.50	
Building and Equipment—Special Fund		13,687.18	13,687.18		16,350.00	16,350.00		2,662.82
Totals—General University Funds	\$406,884.73	\$560,830.72	\$966,715.45	\$416,138.32	\$586,426.58	\$1,002,564.90	\$4,588.53	\$40,437.98
Eastern Branch—Federal Fund	\$10,396.12	\$9,502.32	\$19,898.44	\$10,864.73	\$10,043.11	\$20,907.84		1,009.40
Eastern Branch—State Fund	6,653.36	12,554.21	19,207.77	6,684.65	12,523.12	19,207.77		
Eastern Branch—Building Fund	2,250.00	1,255.65	3,505.65	2,250.00	3,505.65	5,755.65		2,250.00
Totals—Eastern Branch Funds	\$19,299.68	\$23,312.18	\$42,611.86	\$19,799.38	\$26,071.88	\$45,871.26		\$3,259.40
Biological Laboratory	\$22,362.79	\$13,437.18	\$35,799.97	\$29,510.13	\$13,498.06	\$43,008.19		7,208.22
Soil Investigations	9,524.32	479.68	\$10,000.00	10,000.00		10,000.00		
Seed Inspection	6,145.89	7,000.00	13,145.89	6,145.89	7,000.00	13,145.89		
Ridgely Farm	6,494.94	5,504.18	11,999.12	8,632.50	5,127.53	13,760.03		1,760.91
State Fund—Experiment Station	27,000.00	41,900.00	68,900.00	27,000.00	41,900.00	68,900.00		
Station Farm	22,909.28	20,369.76	43,279.04	17,967.46	17,551.40	35,518.86	7,560.18	
Hatch Fund	14,284.96	14,988.28	29,273.24	15,000.00	15,000.00	30,000.00		726.76
Adams Fund	15,554.12	14,412.01	29,966.13	15,786.97	15,000.00	30,786.97		820.84
Totals—Experiment Station Funds	\$124,272.30	\$118,091.09	\$242,363.39	\$130,042.95	\$115,276.99	\$245,319.94	\$7,560.18	\$10,516.73
General Extension	\$6,227.53	\$5,260.58	\$11,488.11	\$6,480.93	\$5,739.11	\$12,220.04		\$731.93
Federal Smith-Lever	45,431.49	52,569.14	98,000.63	58,915.09	50,333.56	109,248.65		11,248.02
State Smith-Lever	34,153.23	40,193.02	74,346.25	28,112.93	46,233.32	74,346.25		
State Smith-Lever—Special Fund		4,134.11	4,134.11		4,134.11	4,134.11		
Special Extension	21,192.21	17,442.06	38,634.27	25,571.24	18,150.57	43,721.81		5,087.54
State Horticultural Fund	8,000.00	8,000.00	16,000.00	8,000.00	8,000.00	16,000.00		
County Demonstration	48,120.00	48,000.00	96,120.00	48,120.00	48,000.00	96,120.00		
Farm Tenacy Survey	600.00		600.00	600.00		600.00		
Totals—Extension Service Funds	\$163,724.46	\$175,598.91	\$339,323.37	\$175,800.19	\$180,590.67	\$356,390.86		\$17,067.49
State Dairymen's Association	5,803.93	5,748.75	11,552.68	5,803.93	5,748.75	11,552.68		
Grand Totals—All Funds	\$718,985.10	\$883,581.65	\$1,602,566.75	\$747,584.77	\$914,114.87	\$1,661,699.64	\$12,148.71	\$71,281.60
						1,602,566.75		12,148.71
Net Cash Balance September 30th, 1921								\$59,132.89

TABLE No. 2

RECONCILIATION OF LEDGER BALANCE WITH BANK AND
CASH BALANCES AS SHOWN ON SEPTEMBER 30, 1921

Total receipts for biennium.....	\$1,661,699.64
Total expenditures for biennium.....	1,602,566.75
<hr/>	
*Excess of receipts over expenditures.....	\$59,132.89
Cash balances as follows:	
Union Trust Company of Maryland—General University Accounts.....	\$21,041.03
First National Bank of Hyattsville—Experiment Station Accounts.....	11,195.64
Citizens National Bank of Laurel—Extension Service Accounts.....	17,067.49
Bank of Ridgely—Ridgely Farm Account.....	1,760.91
Citizens National Bank of Laurel—Eastern Branch Accounts.....	3,259.40
Cash on hand.....	4,808.42
<hr/>	
Net cash balance September 30, 1921.....	\$59,132.89

* The Federal fiscal year began July 1, 1921, at which time the annual payment was made on the Morrill-Nelson Fund, the semi-annual payment on the Federal Smith-Lever and Special Extension Funds and the quarterly payments on the Hatch and Adams Funds. Approved projects, or other fixed liabilities, have been set up against all balances shown above.

TABLE No. 3

GENERAL UNIVERSITY
SUMMARY OF RECEIPTS AND EXPENDITURES FOR YEAR
ENDING SEPTEMBER 30, 1920

	Expenditures 1919-1920	Receipts 1919-1920	Dr. Bal. 9-30-1920	Cr. Bal. 9-30-1920
General University.....	\$348,586.55	\$323,517.88	\$25,068.67	
Morrill-Nelson Fund...	39,598.51	77,098.64		\$37,500.13
State Board of Agricul..	5,000.00	5,000.00		
Federal Smith-Hughes..	5,710.63	4,463.55	1,247.08	
Filtration Plant.....	6,989.04	6,058.25	930.79	
<hr/>				
Totals.....	\$405,884.73	\$416,138.32	\$27,246.54	\$37,500.13
		405,884.73		27,246.54
<hr/>				
Net credit balance Sept. 30, 1920....	\$10,253.59			\$10,253.59

TABLE No. 3A

GENERAL UNIVERSITY
RECEIPTS AND EXPENDITURES FOR YEAR ENDING
SEPTEMBER 30, 1920

RECEIPTS

From State appropriations.....	\$82,259.00
State appropriations for deficiency.....	10,000.00
State appropriations for deficiency in interest.....	2,047.44
Interest on invested funds.....	5,054.35
Allowance for increase in insurance.....	5,017.14
<hr/>	
Total from State of Maryland.....	\$104,377.93
From student fees (board, lodging, laundry, fixed fees, etc.).....	111,908.48
Old student accounts.....	312.38
Summer School fees.....	7,076.51
Fertilizer, lime and feed licenses and tonnage fees..	29,710.61
Sales from dining hall.....	6,981.90
Sales from greenhouse.....	3,034.95
Sales from general service.....	2,280.70
Sales from library.....	452.63
Sales from animal industry.....	18.87
Sales from vocational education.....	115.90
Sales from agricultural books.....	323.75
Athletic and student entertainment—miscellaneous receipts (regular athletic fees included in stu- dent fees).....	3,936.56
Rent of property.....	161.69
Personal telephone calls.....	155.33
Extension service for overhead expenses.....	1,028.15
Interest on deposits.....	288.54
Miscellaneous credits, including departmental trans- fers.....	1,149.87
Loans from Union Trust Company.....	37,500.00
Student supply store.....	12,703.13
<hr/>	
Total receipts from Oct. 1, 1919, to Sept. 30, 1920....	\$323,517.88

TABLE No. 3B

GENERAL UNIVERSITY
RECEIPTS AND EXPENDITURES FOR YEAR ENDING
SEPTEMBER 30, 1920

EXPENDITURES

Expenditures for miscellaneous purposes:	
Dormitory rent, equipment of Calvert Hall, etc....	\$3,916.31
Expenditures for College of Agriculture.....	17,170.63
College of Chemistry.....	24,361.78
College of Education.....	2,746.82
College of Education—Smith-Hughes.....	5,701.67
College of Engineering.....	14,696.16
College of Home Economics.....	3,960.52
College of Liberal Arts.....	6,471.57
Animal Industry Department.....	6,770.98
Military Department.....	905.32
Physical Education.....	2,095.15
Athletics and student entertainment.....	11,623.60
Library.....	3,232.14
Publications.....	11,051.52
Executive Department.....	20,761.30
Dining hall and laundry.....	80,310.99
Purchasing Department.....	1,686.51
Summer School.....	2,668.33
Architect's fees.....	2,000.00
Student refunds.....	3,148.73
Insurance	5,131.56
General service.....	66,218.80
Student supply store.....	11,572.29
Payment of loan made from Soil Fund, year 1916.....	10,000.00
Payment of loans from Union Trust Company.....	22,500.00
Overdraft October 1, 1919.....	7,883.87
<hr/>	
Total expenditures from Oct. 1, 1919, to Sept. 30, 1920..	\$348,586.55

TABLE No. 4

GENERAL UNIVERSITY
SUMMARY OF RECEIPTS AND EXPENDITURES FOR YEAR
ENDING SEPTEMBER 30, 1921

	Expenditures 1919-1920	Receipts 1919-1920	Dr. Bal. 9-30-1921	Cr. Bal. 9-30-1921
General University.....	\$443,702.59	\$440,933.80	\$2,768.79	
Student Supply Store..	15,345.07	19,291.02		\$3,945.95
University Storehouse..	2,046.96	1,962.50	84.46	
University Press.....	4,083.68	2,651.44	1,432.24	
Eastern Branch Special Account.....	134.21	134.21		
Federal Board for Vo- cational Training....	5,927.24	3,150.00	2,777.24	
	<hr/>	<hr/>	<hr/>	<hr/>
	\$471,239.75	\$468,122.97	\$7,062.73	\$3,945.95
Morrill-Nelson Fund....	\$39,724.97	\$77,500.13		\$37,775.16
Federal Smith-Hughes..	8,225.23	6,753.48	1,471.75	
State Board of Agricul.	5,200.13	5,200.13		
State loan account.....	50,000.00	50,000.00		
Building & Equipment.	13,687.18	16,350.00		2,662.82
Transfer to Eastern Branch from Morrill- Nelson.....	10,000.00	10,000.00		
	<hr/>	<hr/>	<hr/>	<hr/>
Total, including over- drafts Oct. 1, 1920, \$37,246.54.....	\$598,077.26	\$633,926.71	\$8,534.48	\$44,383.93
		<hr/>		<hr/>
		598,077.26		8,534.48
*Net credit balance Sept. 30, 1921.....		\$35,849.45		\$35,849.45

* See note on general summary sheet, Table No. 2.

TABLE No. 4A

GENERAL UNIVERSITY
RECEIPTS AND EXPENDITURES FOR YEAR ENDING
SEPTEMBER 30, 1921

RECEIPTS

From State appropriation.....	\$166,730.98
State appropriation for deficiency.....	20,000.00
State appropriation for deficiency in interest.....	2,047.44
Interest on invested funds.....	4,911.00
<hr/>	
Total from State of Maryland.....	\$193,689.42
From student fees (board, lodging, laundry and miscellaneous fees).....	134,986.27
Old student accounts.....	168.00
Summer School fees.....	11,256.07
Fertilizer, lime and feed licenses and tonnage fees..	30,733.24
Sales from dining hall.....	7,473.85
Sales from general service.....	4,964.32
Sales from library.....	445.59
Sales from greenhouse.....	1,957.68
Reimbursement from State Roads Commission.....	875.00
Reimbursement from Baltimore schools.....	1,000.00
Reimbursement from Eastern Branch.....	134.21
Reimbursement from Building Fund for Filtration Plant.....	3,955.35
Reimbursement from Building Fund for plans.....	2,000.00
Rebate on insurance policies.....	829.88
Rebate on mileage book.....	12.22
Athletic and student entertainment.....	5,179.77
(Athletic fees included in student fees)	
Miscellaneous sources.....	3,524.54
Interest on deposits.....	361.58
Transfers to general service from unexpended payroll balances.....	7,134.06
Departmental transfers.....	252.75
Loan from Union Trust Company.....	30,000.00
<hr/>	
Total receipts, General University.....	\$440,933.80

TABLE No. 4B

GENERAL UNIVERSITY RECEIPTS AND EXPENDITURES FOR YEAR ENDING SEPTEMBER 30, 1921

EXPENDITURES

Expenditures for miscellaneous purposes.....	\$2,637.25
Executive Department.....	26,550.42
Dining hall, laundry, etc.....	76,795.83
General service.....	66,372.66
Library.....	4,355.10
Publications.....	8,640.43
Animal Industry.....	11,468.17
Military Science.....	1,717.66
Hospital.....	2,776.22
College of Engineering.....	25,879.20
College of Chemistry.....	29,383.53
College of Liberal Arts.....	15,624.81
College of Agriculture.....	38,318.65
College of Education.....	2,278.50
College of Education—State Smith-Hughes.....	6,977.74
Graduate School.....	1,363.58
Purchasing Department.....	7,241.69
Student refunds.....	3,970.01
Educational Extension.....	138.87
Summer School.....	4,225.47
Interest on loans.....	202.50
Filtration Plant.....	3,972.85
Athletic and Student Entertainment.....	17,981.55
Home Economics.....	4,946.55
Miscellaneous departmental credits.....	1,426.53
Unexpended payroll balances transferred to general service section.....	7,134.06
Refund account of quarterly advance in excess of actual expenditures.....	1,254.09
Payment of 1919-1920 loan—Union Trust Company.....	15,000.00
Payment of 1920-1921 loan—Union Trust Company....	30,000.00
Overdraft September 30, 1920.....	25,068.67
	<hr/>
	\$443,702.59

TABLE No. 5

RECEIPTS AND EXPENDITURES FROM MISCELLANEOUS FUNDS FOR BIENNIUM ENDING SEPTEMBER 30TH, 1921

	Expenditures 1919-1920	Expenditures 1920-1921	Total Expenditures Biennium	Receipts 1919-1920	Receipts 1920-1921	Total Receipts Biennium	Debit Balance Sept.30,1921	Credit Balance Sept.30,1921
MORRILL-NELSON FUND:								
Balance September 30, 1919.....				\$34,598.64		\$34,598.64		
U. S. Appropriation.....				42,500.00	\$40,000.00	82,500.00		
(\$17,500 transferred to Eastern Branch)								
Disbursements:								
Salaries.....	\$39,598.51	\$39,724.97	\$79,323.48					
Balance September 30, 1921.....								\$37,775.16
Totals.....	\$39,598.51	\$39,724.97	\$79,323.48	\$77,098.64	\$40,000.00	117,098.64		\$37,775.16
STATE BOARD OF AGRICULTURE:								
State Appropriation.....				\$5,000.00	\$5,200.13	\$10,200.13		
Disbursements:								
Salaries and Expenses.....	\$5,000.00	\$5,200.13	\$10,200.13					
Totals.....	\$5,000.00	\$5,200.13	\$10,200.13	\$5,000.00	\$5,200.13	\$10,200.13		
FILTRATION PLANT:								
Balance September 30, 1919.....				\$5,676.29		\$5,676.29		
Miscellaneous Receipts.....				381.96	\$3,955.35	4,337.31		
Disbursements:								
Material and Labor.....	\$6,989.04	\$3,042.06	\$10,031.10					
Totals.....	\$6,989.04	\$3,042.06	\$10,031.10	\$6,058.25	\$3,955.35	\$10,013.60	\$17.50	
FEDERAL-SMITH-HUGHES:								
Overdraft September 30, 1919.....			\$790.52					
U. S. Reimbursements.....	\$790.52			\$4,454.75	\$6,753.48	\$11,208.23		
Credit by Refund.....				8.80		8.80		

Disbursements:

Salaries and Expenses.....	4,920.11	6,978.15	11,898.26
Overdraft September 30, 1921.....	.....	.....	.....

Totals.....	\$5,710.63	\$6,978.15	\$12,688.78
-------------	------------	------------	-------------

BUILDING AND EQUIPMENT FUND:

Transfer from Building Fund.....

Disbursements:			
Labor and Material and Equipment...	.....	.....	.....
Balance September 30, 1921.....	.....	\$13,687.18	\$13,687.18

Totals.....	.....	\$16,350.00	\$16,350.00

	.....	.....	\$2,662.82
	.....	.....	\$2,662.82

STATE DAIRYMEN'S ASSOCIATION:

Balance October 1, 1919.....	.....	.....	.....
State Appropriations.....	\$803.93	.....	.....
Miscellaneous Credits.....	5,000.00	\$5,000.00	\$10,000.00
	.....	748.75	748.75
Disbursements:	.....	.....	.....
Salaries and Expenses.....	.....	.....	.....
Unexpended Balance Transferred to	.....	.....	.....
Live Stock Sanitary Section.....	.....	.....	.....
Totals.....	\$5,803.93	\$5,748.75	\$11,552.68

TABLE No. 6

RECEIPTS AND EXPENDITURES—EASTERN BRANCH FUNDS FOR BIENNIUM ENDING SEPTEMBER 30, 1921

EASTERN BRANCH FEDERAL FUND:

	Expenditures 1919-1920	Expenditures 1920-1921	Total Expenditures Biennium	Receipts 1919-1920	Receipts 1920-1921	Total Receipts Biennium	Debit Balance Sept. 30, 1921	Credit Balance Sept. 30, 1921
Balance September 30, 1919.....	.....	.....	.....	\$3,342.48	.....	\$3,342.48	.....	.....
By Transfer from Morrill Fund.....	.....	.....	.....	7,500.00	\$10,000.00	17,500.00	.....	.....
Interest on Deposits.....	.....	.....	.....	22.25	43.11	65.36	.....	.....
Disbursements:								
Salaries, Wages and Expenses.....	\$10,396.12	\$9,502.32	\$19,898.44	.....	.....	.....	.....	.....
Balance September 30, 1921.....	.....	.....	.....	.....	.....	.....	.....	\$1,009.40
Totals.....	\$10,396.12	\$9,502.32	\$19,898.44	\$10,864.73	\$10,043.11	\$20,907.84	.....	\$1,009.40

44

EASTERN BRANCH STATE FUND:

State Appropriation.....	.....	.....	.....	\$6,500.00	\$12,420.00	\$18,920.00	.....	.....
Miscellaneous Receipts.....	.....	.....	.....	184.65	103.12	287.77	.....	.....
Disbursements:								
Salaries and Expenses.....	\$6,653.56	\$12,554.21	\$19,207.77	.....	.....	.....	.....	.....
Totals.....	\$6,653.56	\$12,554.21	\$19,207.77	\$6,684.65	\$12,523.12	\$19,207.77	.....	.....

EASTERN BRANCH BUILDING FUND:

Balance September 30, 1919.....	.....	.....	.....	\$2,115.79	.....	\$2,115.79	.....	.....
Transfer from Building Fund.....	.....	.....	.....	.....	\$3,505.65	3,505.65	.....	.....
Transfer from College Fund.....	.....	.....	.....	134.21	.....	134.21	.....	.....
Disbursements:								
Building.....	.....	.....	.....	.....	.....	.....	.....	.....
Balance September 30, 1921.....	\$2,250.00	\$1,255.65	\$3,505.65	.....	.....	.....	.....	\$2,250.00
Totals.....	\$2,250.00	\$1,255.65	\$3,505.65	\$2,250.00	\$3,505.65	\$5,755.65	.....	\$2,250.00

TABLE No. 7

RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR BIENNIUM ENDING SEPTEMBER 30, 1921

	Expenditures 1919-1920	Expenditures 1920-1921	Total Expenditures Biennium	Receipts 1919-1920	Receipts 1920-1921	Total Receipts Biennium	Debit Balance Sept. 30, 1921	Credit Balance Sept. 30, 1921
STATE FUND(EXPERIMENT STATION)								
State Appropriation.....	.....	.....	.....	\$27,000.00	\$41,900.00	\$68,900.00	.....	.....
Disbursements:								
Salaries, Wages and Expenses.....	\$27,000.00	\$41,900.00	\$68,900.00	.....	.....	.....	.....	.....
Totals.....	\$27,000.00	\$41,900.00	\$68,900.00	\$27,000.00	\$41,900.00	\$68,900.00	.....	.....
BIOLOGICAL LABORATORY:								
Balance September 30, 1919.....	.....	.....	.....	\$3,950.64	.....	\$3,950.64	.....	.....
Receipts from Sales of Serum.....	.....	.....	.....	19,959.49	\$7,998.06	27,957.55	.....	.....
State Appropriation.....	.....	.....	.....	5,600.00	5,500.00	11,100.00	.....	.....
Disbursements:								
Salaries, Wages and Expenses.....	\$22,362.79	\$13,402.18	\$35,764.97	.....	.....	.....	.....	.....
Unexpended Balance Transferred to Live Stock Sanitary Section.....	.....	35.00	35.00	.....	.....	.....	.....	.....
Balance Serum Receipts.....	.....	.....	.....	.....	.....	.....	.....	\$7,208.22
Totals.....	\$22,362.79	\$13,437.18	\$35,799.97	\$29,510.13	\$13,498.06	\$43,008.19	.....	\$7,208.22
SOIL FUND:								
Overdraft September 30, 1919.....	\$415.41	.....	\$415.41	.....	.....	.....	.....	.....
Payment of Loan to College Account Year 1916-1917.....	.....	.....	.....	\$10,000.00	.....	\$10,000.00	.....	.....
Disbursements:								
Salaries, Wages and Expenses.....	9,104.91	\$479.68	\$9,584.59	.....	.....	.....	.....	.....
Totals.....	\$9,520.32	\$479.68	\$10,000.00	\$10,000.00	.....	\$10,000.00	.....	.....
SEED INSPECTION:								
Balance September 30, 1919.....	.....	.....	.....	\$45.89	.....	\$45.89	.....	.....
State Appropriation.....	.....	.....	.....	6,100.00	\$7,000.00	\$13,100.00	.....	.....
Disbursements:								
Salaries and Expenses.....	\$6,145.89	7,000.00	\$13,145.89	.....	.....	.....	.....	.....
Totals.....	\$6,145.89	\$7,000.00	\$13,145.89	\$6,145.89	\$7,000.00	\$13,145.89	.....	.....

TABLE No. 7—Continued

STATION FARM ACCOUNT:

	Expenditures 1919-1920	Expenditures 1920-1921	Total Expenditures Biennium	Receipts 1919-1920	Receipts 1920-1921	Total Receipts Biennium	Debit Balance Sept.30,1921	Credit Balance Sept.30,1921
Overdraft September 30, 1919.....	\$235.68		\$235.68	\$17,767.27	\$17,556.69	\$35,323.96		
Receipts from Farm Sales.....				200.19	194.71	394.90		
Interest on Deposits.....								
Disbursements:								
Wages and Expenses.....	\$22,673.60	\$20,369.76	\$43,043.36					
Overdraft September 30, 1921.....							\$7,560.18	
Totals.....	\$22,909.28	\$20,369.76	\$43,279.04	\$17,967.46	\$17,751.40	\$35,718.86	\$7,560.18	

RIDGELY FARM:

Balance September 30, 1919.....				\$2,894.12		\$2,894.12		
Receipts from Sales.....				738.38	\$127.53	865.91		
State Appropriation.....				5,000.00	5,000.00	10,000.00		
Disbursements:								
Salaries, Wages and Expenses.....	\$6,494.94	\$5,504.18	\$11,999.12					
Balance September 30, 1921.....								\$1,760.91

HATCH FUND:

Overdraft September 30, 1919.....	\$759.72		\$759.72	\$8,632.50	\$5,127.53	\$13,760.03		\$1,760.91
U. S. Appropriations.....								
Disbursements:								
Salaries and Expenses.....	13,525.24	\$14,988.28	28,513.52	\$15,000.00	\$15,000.00	\$30,000.00		
Balance September 30, 1921.....								\$726.76
Totals.....	\$14,284.96	\$14,988.28	\$29,273.24	\$15,000.00	\$15,000.00	\$30,000.00		\$726.76

ADAMS FUND:

Balance September 30, 1919.....				\$786.97		\$786.97		
U. S. Appropriation.....				15,000.00	\$15,000.00	\$30,000.00		
Disbursements:								
Salaries and Expenses.....	\$15,554.12	\$14,412.01	\$29,966.13					
Balance September 30, 1921.....								\$820.84
Totals.....	\$15,554.12	\$14,412.01	\$29,966.13	\$15,786.97	\$15,000.00	\$30,786.97		\$820.84

TABLE No. 8

RECEIPTS AND EXPENDITURES—EXTENSION SERVICE FUNDS FOR BIENNIUM ENDING SEPTEMBER 30, 1921

		Expenditures 1919-1920	Expenditures 1920-1921	Total Expenditures Biennium	Receipts 1919-1920	Receipts 1920-1921	Total Receipts Biennium	Debit Balance Sept. 30, 1921	Credit Balance Sept. 30, 1921
GENERAL EXTENSION:									
Balance September 30, 1919.....									
State Appropriation.....									
Receipts, Miscellaneous, and Interest..									
Disbursements:									
Salaries and Expenses.....									
Balance September 30, 1921.....									
Totals.....		\$6,227.53	\$5,260.58	\$11,488.11	\$6,480.93	\$5,739.11	\$12,220.04	.....	\$731.93
FEDERAL-SMITH-LEVER:									
Balance September 30, 1919.....									
U. S. Appropriation.....									
Disbursements:									
Salaries and Expenses.....									
Balance September 30, 1921.....									
Totals.....		\$45,431.49	\$52,569.14	\$98,000.63	\$58,915.09	\$50,333.56	\$109,248.65	.....	\$11,248.02
STATE-SMITH-LEVER:									
Overdraft September 30, 1919.....									
State Appropriation.....									
Disbursements:									
Salaries and Expenses.....									
Totals.....		\$34,153.23	\$40,193.02	\$74,346.25	\$28,112.93	\$46,233.32	\$74,346.25	.....	.....
SPECIAL EXTENSION:									
Balance September 30, 1919.....									
U. S. Appropriation.....									
Disbursements:									
Salaries and Expenses.....									
Balance September 30, 1921.....									
Totals.....		\$21,192.21	\$17,442.06	\$38,634.27	\$25,571.24	\$18,150.57	\$43,721.81	.....	\$5,087.54
Totals.....		\$21,192.21	\$17,442.06	\$38,634.27	\$25,571.24	\$18,150.57	\$43,721.81	.....	\$5,087.54

TABLE No. 8—Continued

RECEIPTS AND EXPENDITURES—EXTENSION SERVICE FUNDS—Continued.

	Expenditures 1919-1920	Expenditures 1920-1921	Total Expenditures Biennium	Receipts 1919-1920	Receipts 1920-1921	Total Receipts Biennium	Debit Balance Sept. 30, 1921	Credit Balance Sept. 30, 1921
STATE SMITH-LEVER SPECIAL FUND:								
Transfer from State Smith-Lever....	.....	.....	.....	.....	\$4,134.11	\$4,134.11	.....	.....
Disbursements:								
Expenses .....	.....	\$4,134.11	\$4,134.11	.....	.....	.....	.....	.....
Totals.....	.....	\$4,134.11	\$4,134.11	.....	\$4,134.11	\$4,134.11	.....	.....
HORTICULTURAL FUND:								
State Appropriation.....	.....	.....	.....	\$8,000.00	\$8,000.00	\$16,000.00	.....	.....
Disbursements:								
Salaries and Expenses.....	\$8,000.00	\$8,000.00	\$16,000.00	.....	.....	.....	.....	.....
Totals.....	\$8,000.00	\$8,000.00	\$16,000.00	\$8,000.00	\$8,000.00	\$16,000.00	.....	.....
COUNTY DEMONSTRATION:								
Balance September 30, 1919.....	.....	.....	.....	\$120.00	.....	\$120.00	.....	.....
State Appropriation.....	.....	.....	.....	48,000.00	\$48,000.00	96,000.00	.....	.....
Disbursements:								
Salaries and Expenses.....	\$48,120.00	\$48,000.00	\$96,120.00	.....	.....	.....	.....	.....
Totals.....	\$48,120.00	\$48,000.00	\$96,120.00	\$48,120.00	\$48,000.00	\$96,120.00	.....	.....
FARM TENANCY SURVEY:								
Receipts .....	.....	.....	.....	\$600.00	.....	\$600.00	.....	.....
Disbursements:								
Traveling Expenses.....	\$600.00	.....	\$600.00	.....	.....	.....	.....	.....
Totals.....	\$600.00	.....	\$600.00	\$600.00	.....	\$600.00	.....	.....

TABLE No. 9

RECAPITULATION OF COMMODITY CLASSIFICATION — UNIVERSITY OF MARYLAND FOR BIENNIUM ENDING SEPTEMBER 30, 1921—(See Separate Statement for Baltimore Schools)

	General University 1919-1920	General University 1920-1921	Eastern Branch 1919-1920	Eastern Branch 1920-1921	Special Funds 1919-1920	Special Funds 1920-1921	Total for Biennium 1919-1921
Salaries	\$134,132.84	\$205,719.56	\$10,633.30	\$12,503.52	\$167,017.79	\$191,739.81	\$721,746.82
Labor	61,644.09	66,666.68	1,550.00	1,451.90	24,875.98	23,669.35	179,858.00
Meats and Groceries	53,380.11	46,304.07	83.87	422.40	.....	.....	100,190.45
Laundry Expense	327.10	4,218.40	.....	.....	.....	.....	4,545.50
Chemicals and Laboratory Supplies	3,654.01	3,889.43	.....	409.29	15,934.68	7,074.51	30,961.92
Traveling Expenses	4,157.63	6,720.28	.....	.....	38,117.54	36,635.80	85,631.25
Postage, Stationery and Printing	12,590.37	13,150.03	221.53	300.19	9,709.61	10,522.62	46,494.35
Seeds, Plants and Sundry Supplies	2,279.63	8,037.32	2,357.70	1,874.22	5,059.14	3,285.32	22,893.33
Freight and Express	836.25	3,551.88	.....	20.81	1,311.87	1,613.21	7,334.02
Freight on Coal	3,478.60	4,782.79	.....	.....	.....	.....	8,261.39
Coal and Gasoline	4,508.56	11,448.67	1,642.76	3,102.14	1,368.79	2,292.27	24,363.19
Gas and Electricity	4,554.08	4,222.29	.....	.....	.....	.....	8,776.37
Telephone and Telegraph (classified as postage and stationery under special funds) .....	.....	.....	.....	.....	.....	.....	.....
Music	1,347.49	1,628.50	.....	.....	.....	.....	2,975.99
Insurance	243.48	330.56	.....	.....	.....	.....	574.04
Interest on Notes	5,271.96	1,550.52	.....	.....	.....	.....	6,822.48
Rent	648.75	410.00	.....	.....	.....	.....	1,058.75
Trucks and Repairs	1,075.00	1,261.34	.....	.....	1,155.00	600.00	4,091.34
Building Repairs	3,012.56	1,028.73	.....	.....	.....	.....	4,041.29
Student Refunds	13,408.82	11,207.26	2,250.00	1,346.04	1,471.75	2,855.67	32,539.54
Contingent Expenses	3,088.98	3,970.01	.....	.....	.....	.....	7,058.99
Association Dues	6,814.17	924.06	.....	25.00	1,113.12	531.98	9,408.33
Year Books .....	.....	298.00	.....	.....	.....	.....	298.00
Athletic Supplies, Guarantees, etc. ....	.....	400.00	.....	.....	.....	.....	400.00
Departmental Transfers	11,623.60	4,400.15	.....	.....	.....	.....	16,023.75
Commencement Expenses	1,707.59	9,618.14	.....	205.16	25.00	.....	11,555.89
University Storehouse .....	.....	880.33	.....	.....	.....	.....	880.33
.....	.....	2,046.96	.....	.....	.....	.....	2,046.96

TABLE No. 9—Continued

RECAPITULATION OF COMMODITY CLASSIFICATION—UNIVERSITY OF MARYLAND—Continued.

	General University 1919-1920	General University 1920-1921	Eastern Branch 1919-1920	Eastern Branch 1920-1921	Special Funds 1919-1920	Special Funds 1920-1921	Total for Bienniums 1919-1921
Books and Supplies for Student Supply							
Store	11,572.29	14,184.94	.....	.....	.....	.....	25,757.23
Fertilizers .....	.....	.....	.....	.....	1,609.44	1,330.56	2,940.00
Feeding Stuffs .....	.....	.....	.....	.....	7,088.18	6,467.56	13,555.74
Tools and Machinery	1,751.34	1,694.92	515.87	1,599.36	6,495.95	3,213.72	15,271.16
Furniture and Fixtures	14,439.05	20,774.45	44.65	17.75	1,494.65	1,458.29	38,228.84
Scientific Apparatus	1,516.97	3,369.46	.....	34.40	1,659.29	1,427.47	8,007.59
Live Stock .....	.....	350.00	.....	.....	278.10	277.52	905.62
Library	1,645.02	2,354.94	.....	.....	862.61	504.46	5,367.03
Totals for Payroll and Expenses....	\$364,710.34	\$461,394.67	\$19,299.68	\$23,312.18	\$286,648.49	\$295,500.12	\$1,450,865.48
Quarterly Advance, adjustment account							
State Appropriation .....	.....	\$1,454.22	.....	.....	.....	\$748.75	\$2,202.97
State Working Fund Repaid .....	.....	50,000.00	.....	.....	.....	.....	50,000.00
Balances Transferred to Farm Fund and							
Live Stock Sanitary Section .....	.....	.....	.....	.....	.....	2,853.40	2,853.40
Transfers to correct errors in entries...	.....	.....	.....	.....	.....	336.48	336.48
Loans Repaid—Soil Fund	\$10,000.00	.....	.....	.....	.....	.....	10,000.00
Loans Repaid—Union Trust Co.	22,500.00	45,000.00	.....	.....	.....	.....	67,500.00
Departmental Adjustments .....	.....	2,981.83	.....	.....	.....	.....	2,981.83
Overdrafts September 30th, 1919	8,674.39	.....	.....	.....	7,152.20	.....	15,826.59
Totals for Biennium	\$405,884.73	\$560,830.72	\$19,299.68	\$23,312.18	\$293,800.69	\$299,438.75	\$1,602,566.75

TABLE No. 10
GENERAL UNIVERSITY FUNDS FOR YEAR ENDING SEPTEMBER 30TH, 1920

COMMODITY CLASSIFICATION—UNIVERSITY OF MARYLAND

	General University	Morrill- Nelson	Federal Smith-Hughes	Filtration Plant	Executive Expenses	Total
Salaries	\$87,027.88	\$39,390.71	\$4,314.25	.....	\$3,400.00	\$134,132.84
Labor	55,472.82	.....	.....	\$6,171.27	.....	61,644.09
Meats and Groceries	53,380.11	.....	.....	.....	.....	53,380.11
Laundry Expenses	327.10	.....	.....	.....	.....	327.10
Chemicals and Laboratory Supplies	3,654.01	.....	.....	.....	.....	3,654.01
Postage, Stationery and Printing	12,590.37	.....	.....	.....	.....	\$12,590.37
Traveling Expenses	3,410.64	.....	330.11	.....	416.88	4,157.63
Seeds, Plants and Sundry Supplies	1,798.01	.....	145.75	.....	335.87	2,279.63
Freight and Express	836.25	.....	.....	.....	.....	836.25
Freight on Coal	3,478.60	.....	.....	.....	.....	3,478.60
Coal, Gasoline and Oil	4,508.56	.....	.....	.....	.....	4,508.56
Gas and Electricity	4,554.08	.....	.....	.....	.....	4,554.08
Telephone and Telegraph	1,347.49	.....	.....	.....	.....	1,347.49
Music	243.48	.....	.....	.....	.....	243.48
Insurance	5,271.96	.....	.....	.....	.....	5,271.96
Interest	648.75	.....	.....	.....	.....	648.75
Rent	420.00	.....	130.00	.....	525.00	1,075.00
Trucks and Repairs	3,012.56	.....	.....	.....	.....	3,012.56
Building Repairs	12,591.05	.....	.....	817.77	.....	13,408.82
Student Refunds	3,088.98	.....	.....	.....	.....	3,088.98
Contingent Expenses	6,814.17	.....	.....	.....	.....	6,814.17
Athletic Supplies, Guarantees, etc.	11,623.60	.....	.....	.....	.....	11,623.60
Departmental Transfers	1,707.59	.....	.....	.....	.....	1,707.59
Books and Supplies for Student Supply Store .....	.....	.....	.....	.....	.....	.....
Library	11,572.29	.....	.....	.....	.....	11,572.29
Furniture and Fixtures	1,645.02	.....	.....	.....	.....	1,645.02
Tools and Machinery	13,909.00	207.80	.....	.....	322.25	\$14,439.05
Scientific Apparatus	1,751.34	.....	.....	.....	.....	1,751.34
.....	1,516.97	.....	.....	.....	.....	1,516.97
Totals for Payroll and Expenses	\$308,202.68	\$39,598.51	\$4,920.11	\$6,989.04	\$5,000.00	\$364,710.34
Payment of Loans:						
Soil Fund	\$10,000.00	.....	.....	.....	.....	10,000.00
Union Trust Company of Maryland	22,500.00	.....	.....	.....	.....	22,500.00
Overdraft October 1st, 1919	7,883.87	.....	790.52	.....	.....	8,674.39
Grand Totals for Year 1919-1920	\$348,586.55	\$39,598.51	\$5,710.63	\$6,989.04	\$5,000.00	\$405,884.73

TABLE No. 11

COMMODITY CLASSIFICATION—UNIVERSITY OF MARYLAND

GENERAL UNIVERSITY FUNDS, FOR YEAR ENDING SEPTEMBER 30TH, 1921

	General University	Morrill- Nelson	Federal Smith-Hughes	Filtration Plant	Executive Expenses	Building and Equipment	Totals
Salaries	\$156,275.86	\$39,724.97	\$6,318.73	.....	\$3,400.00	.....	\$205,719.56
Labor	63,645.15	.....	.....	\$1,449.93	.....	\$1,571.60	66,666.68
Meats and Groceries	46,304.07	.....	.....	.....	.....	.....	46,304.07
Laundry Expenses	4,218.40	.....	.....	.....	.....	.....	4,218.40
Chemicals and Laboratory Supplies	3,887.84	.....	1.59	.....	.....	.....	3,889.43
Postage, Stationery and Printing	12,610.65	.....	150.43	.....	388.95	.....	13,150.03
Traveling Expenses	6,060.81	.....	375.57	.....	283.90	.....	6,720.28
Seeds, Plants and Sundry Supplies	7,892.60	.....	109.73	34.99	.....	.....	8,037.32
Freight and Express	3,485.06	.....	.....	.....	.....	66.82	3,551.88
Freight on Coal	4,782.79	.....	.....	.....	.....	.....	4,782.79
Coal and Gasoline	11,448.67	.....	.....	.....	.....	.....	11,448.67
Gas and Electricity	4,222.29	.....	.....	.....	.....	.....	4,222.29
Telephone and Telegraph	1,628.50	.....	.....	.....	.....	.....	1,628.50
Music	330.56	.....	.....	.....	.....	.....	330.56
Insurance	1,550.52	.....	.....	.....	.....	.....	1,550.52
Interest	410.00	.....	.....	.....	.....	.....	410.00
Rent	1,261.34	.....	.....	.....	.....	.....	1,261.34
Truck Repairs	1,028.73	.....	.....	.....	.....	.....	1,028.73
Building Repairs	8,652.12	.....	.....	1,531.59	.....	1,023.55	11,207.26
Student Refunds	3,970.01	.....	.....	.....	.....	.....	3,970.01
Contingent Expenses	135.86	.....	.....	.....	.....	.....	924.06
Association Dues	298.00	.....	22.10	.....	766.10	.....	298.00
Year Books	400.00	.....	.....	.....	.....	.....	400.00
Athletic Supplies, Guarantees, etc.	4,400.15	.....	.....	.....	.....	.....	4,400.15
Departmental Transfers	9,618.14	.....	.....	.....	.....	.....	9,618.14
Commencement Expenses	880.33	.....	.....	.....	.....	.....	880.33
University Storehouse	2,046.96	.....	.....	.....	.....	.....	2,046.96

Books and Supplies for Student Supply									
Store.....	14,184.94	.....	.....	.....	.....	.....	.....	.....	14,184.94
Library	2,354.94	.....	.....	.....	.....	.....	.....	.....	2,354.94
Furniture and Fixtures.....	9,749.24	.....	.....	.....	.....	.....	.....	11,025.21	20,774.45
Scientific Apparatus.....	3,208.41	.....	.....	.....	.....	.....	161.05	.....	3,369.46
Tools and Machinery.....	1,669.37	.....	.....	.....	.....	.....	.....	.....	1,694.92
Live Stock.....	350.00	.....	.....	.....	.....	.....	.....	.....	350.00
Totals for Payroll and Expenses.....	\$392,962.31	\$39,724.97	\$6,978.15	\$3,042.06	\$5,000.00	\$13,687.18			\$461,394.67
Payment of Loans: Union Trust Co.....	\$45,000.00	.....	.....	.....	.....	.....	.....	.....	\$45,000.00
Payment of State Working Fund.....	50,000.00	.....	.....	.....	.....	.....	.....	.....	50,000.00
Adjustment of Quarterly Advance.....	1,254.09	.....	.....	.....	.....	.....	200.13	.....	1,454.22
Departmental Transfers.....	2,981.83	.....	.....	.....	.....	.....	.....	.....	2,981.83
Transfer to Eastern Branch Account.....	.....	\$10,000.00	.....	.....	.....	.....	.....	.....	10,000.00
Overdrafts September 30, 1920.....	25,068.67	.....	1,247.08	930.79	.....	.....	.....	.....	27,246.54
Grand Totals for Year 1920-1921....	\$517,266.90	\$49,724.97	\$8,225.23	\$3,972.85	\$5,200.13	\$13,687.18			\$598,077.26

TABLE No. 12

COMMODITY CLASSIFICATION—EASTERN BRANCH, PRINCESS, ANNE, MD.
FOR BIENNIUM ENDING SEPTEMBER 30, 1921

	Year	Totals	Eastern Branch State Account	Eastern Branch Federal Account	Eastern Branch Building Fund
Salaries	1919-1920	\$10,633.30	\$2,000.00	\$8,633.30	.....
Salaries	1920-1921	12,503.52	3,825.00	8,678.52	.....
Labor	1919-1920	1,550.00	1,550.00	.....	.....
Labor	1920-1921	1,451.90	1,324.90	127.00	.....
Domestic Science Supplies.....	1919-1920	83.87	83.87	.....	.....
Domestic Science Supplies.....	1920-1921	422.40	263.97	158.43	.....
Stationery and Printing.....	1919-1920	221.53	9.70	211.83	.....
Stationery and Printing.....	1920-1921	300.19	189.37	110.82	.....
Furniture and Fixtures.....	1919-1920	44.65	.....	44.65	.....
Furniture and Fixtures.....	1920-1921	17.75	.....	.....	.....
Tools and Machinery.....	1919-1920	515.87	309.22	206.65	.....
Tools and Machinery.....	1920-1921	1,599.36	1,599.36	.....	.....
Seeds, Plants and Sundries.....	1919-1920	2,357.70	1,058.01	1,299.69	.....
Seeds, Plants and Sundries.....	1920-1921	1,874.22	1,561.72	312.50	.....
Fuel and Power.....	1919-1920	1,642.76	1,642.76	.....	.....
Fuel and Power.....	1920-1921	3,102.14	3,058.04	44.10	.....
Contingent Expenses.....	1920-1921	25.00	25.00	.....	.....
Freight and Express.....	1920-1921	20.81	20.81	.....	.....
Chemicals and Laboratory Supplies.....	1920-1921	409.29	409.29	.....	.....
Building and Repairs.....	1919-1920	2,250.00	.....	.....	\$2,250.00
Building and Repairs.....	1920-1921	1,346.04	90.39	.....	1,255.65
Scientific Apparatus.....	1920-1921	34.40	34.40	.....	.....
Transfer from State Fund.....	.....	70.95	.....	70.95	.....
Transfer from General University.....	.....	134.21	134.21	.....	.....
Totals—Eastern Branch.....	.....	\$42,611.86	\$19,207.77	\$19,898.44	\$3,505.65

TABLE No. 13

CCMMODITY CLASSIFICATION—SPECIAL FUNDS—FOR YEAR ENDING SEPTEMBER 30, 1920

	Totals	Station Farm	State Fund Experiment Station	Soil Fund	Biological Laboratory	Seed Inspection	Hatch Fund	Adams Fund	Ridgely Farm	Federal Smith- Lever	State Smith- Lever	State Horticult- ural Fund	General Extension	County Demonstra- tion	State Dairymen's Association	Special Extension	Farm Tenancy
Salaries	\$167,017.79	\$620.85	\$10,270.73	\$5,504.16	\$4,470.80	\$4,445.89	\$12,654.01	\$12,516.99	\$2,160.85	\$29,340.76	\$18,599.17	\$5,200.00	\$2,169.46	\$38,000.00	\$961.11	\$20,103.01	.....
Labor	24,875.98	15,379.17	3,899.27	921.57	690.03	200.00	622.85	33.32	1,367.65	.....	200.00	.....	108.24	.....	1,453.88	.....	.....
Publications	5,729.02	397.85	2,000.00	.....	.....	.....	105.43	.....	.....	1,822.40	1,026.58	.....	288.11	.....	88.65	.....	.....
Postage and Stationery.....	3,980.59	37.60	516.37	5.00	358.53	194.56	13.89	26.31	120.26	739.82	1,383.70	109.61	474.94	.....	.....	.....	.....
Freight and Express.....	1,311.87	.....	600.00	2.21	397.95	.....	.....	.....	17.62	27.42	250.00	.....	16.67	.....	.....	.....	.....
Heat, Light and Power.....	1,368.79	359.27	904.82	32.42	.....	.....	31.73	29.57	10.98	.....	.....	.....	.....	.....	.....	.....	.....
Chemicals and Laboratory Supplies.	15,934.68	.....	156.98	.....	*15,015.63	9.16	.....	663.51	52.30	.....	.....	4.88	32.22	.....	.....	.....	.....
Seeds, Plants and Sundries.....	5,059.14	674.79	409.41	769.16	301.41	40.71	3.46	418.87	341.34	143.50	255.31	872.90	828.28	.....	.....	.....	.....
Fertilizers	1,609.44	385.25	281.75	803.79	.....	.....	.....	.....	138.65	.....	.....	.....	.....	.....	.....	.....	.....
Feeding Stuffs.....	7,088.13	1,848.63	4,721.00	.....	460.60	.....	.....	.....	57.95	.....	.....	.....	.....	.....	.....	.....	.....
Library	862.61	84.22	303.50	4.15	45.00	.....	23.50	6.75	97.00	9.70	98.67	36.85	153.27	.....	.....	.....	.....
Tools, Machinery, etc.....	6,495.95	529.86	1,963.62	4.66	8.80	419.31	12.20	269.54	1,299.74	.....	.....	18.75	125.42	.....	1,844.05	.....	.....
Furniture and Fixtures.....	1,494.65	.....	228.87	.....	150.17	352.80	.....	415.04	20.58	113.58	202.50	.....	11.11	.....	.....	.....	.....
Scientific Apparatus.....	1,659.29	.....	.....	7.54	302.31	126.23	58.17	989.84	12.58	109.95	.....	48.67	4.00	.....	.....	.....	.....
Live Stock.....	278.10	27.00	8.85	.....	121.30	.....	.....	29.05	91.90	.....	.....	.....	.....	.....	.....	.....	.....
Traveling Expenses.....	38,117.54	974.74	500.00	1,034.12	9.57	287.16	.....	.....	192.64	12,243.31	6,395.91	1,708.34	1,881.31	10,120.00	1,081.24	1,089.20	600.00
Contingent Expenses.....	1,113.12	87.48	.....	.....	27.34	5.00	.....	.....	2.00	881.05	.....	.....	109.50	.....	.....	.....	.....
Building and Repairs.....	1,471.75	486.89	234.83	16.13	3.35	65.07	.....	154.58	510.90	.....	.....	.....	.....	.....	.....	.....	.....
Rent	1,155.00	780.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	375.00	.....	.....
Transfers	25.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.00	.....	.....	.....	.....
Overdraft October 1, 1919.....	7,152.20	235.68	.....	415.41	.....	.....	759.72	.....	.....	.....	5,741.39	.....	.....	.....	.....	.....	.....
Totals.....	\$293,800.69	\$22,909.28	\$27,000.00	\$9,520.32	\$22,362.79	\$6,145.89	\$14,284.96	\$15,554.12	\$6,494.94	\$45,431.49	\$34,153.23	\$8,000.00	\$6,227.53	\$48,120.00	\$5,803.93	\$21,192.21	\$600.00

* Includes Hog Cholera Serum.



TABLE No. 14

COMMODITY CLASSIFICATION—SPECIAL FUNDS—FOR YEAR ENDING SEPTEMBER 30, 1921

	Totals	Station Farm	State Fund Experiment Station	Biological Laboratory	Soil Fund	Seed Inspection	Hatch Fund	Adams Fund	Ridgely Farm	Federal Smith- Lever	State Smith- Lever	State Horticul- tural Fund	General Extension	County Demonstra- tion	State Dairymen's Association	Special Extension	Special Smith- Lever
Salaries	\$191,739.81	\$199.97	\$16,961.69	\$5,315.39	\$150.00	\$5,980.00	\$12,030.77	\$12,281.55	\$1,870.00	\$41,076.05	\$30,600.00	\$4,900.00	\$2,205.75	\$38,000.00	\$2,539.03	\$17,442.06	\$187.55
Labor	23,669.35	13,278.98	7,894.22	190.00	.....	.....	966.35	236.50	1,101.80	.....	.....	.....	1.50	.....	.....	.....	.....
Publications	5,762.75	.....	2,697.78	.....	.....	.....	412.00	.....	.....	342.37	2,000.00	.....	223.71	.....	.....	.....	86.89
Postage and Stationery.....	4,759.87	.....	670.89	256.30	.....	135.71	3.49	31.98	66.33	706.93	1,065.10	270.11	854.55	.....	.....	.....	698.48
Freight and Express.....	1,613.21	457.58	741.77	205.79	.....	.....	.....	2.00	122.70	21.80	10.95	7.47	26.76	.....	.....	.....	16.39
Heat, Light and Power.....	2,292.27	396.13	1,069.42	.....	.....	.....	178.27	630.25	18.20	.....	.....	.....	.....	.....	.....	.....	.....
Chemicals and Laboratory Supplies..	7,074.51	.....	256.03	6,315.81	.....	12.65	55.23	430.29	4.50	.....	.....	.....	.....	.....	.....	.....	.....
Seeds, Plants and Sundries.....	3,285.32	517.10	866.69	436.77	75.25	36.65	489.56	182.32	406.76	93.35	122.52	58.49	156.18	.....	.81	.....	22.87
Fertilizers	1,330.56	375.50	509.88	.....	.....	.....	.....	.....	445.18	.....	.....	.....	.....	.....	.....	.....	.....
Feeding Stuffs.....	6,467.56	3,645.73	2,810.63	11.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Library	504.46	4.75	311.19	.....	.....	.....	5.50	.....	.....	17.02	17.42	6.43	85.22	.....	.....	.....	56.93
Tools, Machinery and Appliances...	3,213.72	430.26	2,328.59	.....	.....	126.00	32.11	48.09	197.56	41.20	.....	.....	9.91	.....	.....	.....	.....
Furniture and Fixtures.....	1,458.29	4.85	68.23	2.93	.....	79.07	599.25	102.72	.....	145.98	101.79	157.50	61.73	.....	48.00	.....	86.24
Scientific Apparatus.....	1,427.47	.....	141.90	434.20	70.00	.....	158.35	348.87	8.00	133.73	107.00	.....	25.42	.....	.....	.....	.....
Live Stock.....	277.52	40.00	237.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Traveling Expenses.....	36,635.80	749.17	766.42	.....	184.43	604.92	.....	38.38	360.03	9,990.71	6,000.00	2,600.00	1,591.51	10,000.00	939.71	.....	2,810.52
Contingent Expenses.....	531.98	155.20	96.70	58.79	.....	5.00	.....	.....	124.70	.....	.....	.....	18.34	.....	73.25	.....	.....
Building and Repairs.....	2,855.67	114.54	1,792.29	175.00	.....	.....	57.40	79.06	637.38	.....	.....	.....	.....	.....	.....	.....	.....
Rent	600.00	.....	600.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals—Payroll and Expenses....	\$295,500.12	\$20,369.76	\$40,641.84	\$13,402.18	\$479.68	\$6,980.00	\$14,988.28	\$14,412.01	\$5,363.14	\$52,569.14	\$40,024.78	\$8,000.00	\$5,260.58	\$48,000.00	\$3,600.80	\$17,442.06	\$3,965.87
Unexpended Balances.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Transferred to Farm Fund.....	1,419.20	.....	1,258.16	.....	.....	20.00	.....	.....	141.04	.....	.....	.....	.....	.....	.....	.....	.....
Transfer to correct errors.....	336.48	.....	.....	.....	.....	.....	.....	.....	.....	.....	168.24	.....	.....	.....	.....	.....	168.24
Unexpended Balances.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Transferred to Live Stock Sanitary..	1,434.20	.....	.....	35.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,399.20	.....	.....
To Adjust Quarterly Advance.....	748.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	748.75	.....	.....
Totals.....	\$299,438.75	\$20,369.76	\$41,900.00	\$13,437.18	\$479.68	\$7,000.00	\$14,988.28	\$14,412.01	\$5,504.18	\$52,569.14	\$40,193.02	\$8,000.00	\$5,260.58	\$48,000.00	\$5,748.75	\$17,442.06	\$4,134.11

TABLE No. 15

SUMMARY OF STATE APPROPRIATIONS TO THE MARYLAND
AGRICULTURAL COLLEGE (NOW THE UNIVERSITY OF
MARYLAND) FROM 1858 TO 1922

College Proper (from 1858 to 1922)

Maintenance.....	\$1,007,016.78
Buildings, equipment and major repairs	525,600.00
Equipment (special, 1910).....	5,000.00
Deficiency in interest.....	40,752.76
Special appropriations.....	82,742.10

Total for College..... \$1,661,111.64

Experiment Stations (from 1902 to 1922)

Maintenance.....	\$257,800.00
Tobacco Investigations.....	10,000.00
Horticultural Investigations.....	40,000.00
Biological Laboratory.....	42,200.00
Seed Inspection.....	46,200.00
Soil Fund.....	30,000.00
Ridgely Farm.....	45,500.00

Total for Experiment Station..... \$471,700.00

Extension Service (from 1912 to 1922)

General Extension.....	\$42,120.00
State Smith-Lever.....	194,238.87
County Demonstration.....	238,000.00

Total for Extension Service..... \$474,358.87

Special Funds Administered by College Organization

State Horticultural Department (from 1898 to 1922).....	\$194,000.00
Farmers' Institutes (from 1904 to 1916)	84,000.00
State Dairymen's Association (from 1918 to 1922).....	20,000.00
Eastern Branch (from 1914 to 1922)...	49,840.00

Total Special Funds..... \$347,840.00

State Board of Agriculture

Executive Expenses (from 1916 to 1922)	\$30,000.00
Live Stock Sanitary Section (from 1918 to 1922).....	162,800.00
Hog Cholera Eradication (from 1920 to 1922).....	20,000.00

Total Board of Agriculture..... \$212,800.00

Grand Total—All Funds..... \$3,167,810.51

TABLE No. 15A

APPROPRIATIONS TO THE MARYLAND AGRICULTURAL COLLEGE

Compiled from figures in "Report of the State Commission authorized by Joint Resolution No. 7 of the General Assembly of 1912 to examine into the relation of the State of Maryland to the Maryland Agricultural College" to 1912, and from other sources after that date.

Date of Appr'n	For Year	Maintenance	Buildings	Equipment	Deficiency in Interest	Special Appropriation	Total	Remarks
1858	1859	\$6,000.00	.....	.....	.....	.....	\$6,000.00	
1860	1860	6,000.00	.....	.....	.....	.....	6,000.00	
1861	1862	6,000.00	.....	.....	.....	.....	6,000.00	
1861	1863	6,000.00	.....	.....	.....	.....	6,000.00	
1864	1864	6,000.00	.....	.....	.....	.....	6,000.00	Accepted Act of Congress donating public lands.
1864	1865	6,000.00	.....	.....	.....	.....	6,000.00	
1865	1866	6,000.00	.....	.....	.....	.....	6,000.00	
1866	....	.....	.....	.....	.....	\$45,000.00	45,000.00	Extra Session—Appropriation to li- quidate indebtedness and purchase furniture. In three installments. State becomes joint owner of col- lege.
1867	1868	6,000.00	.....	.....	.....	.....	6,000.00	
1867	1869	6,000.00	.....	.....	.....	.....	6,000.00	
1868	1870	6,000.00	.....	.....	.....	.....	6,000.00	
1870	1871	6,000.00	.....	.....	.....	.....	6,000.00	
1870	1872	6,000.00	.....	.....	.....	.....	6,000.00	
1872	1873	6,000.00	.....	.....	.....	.....	6,000.00	
1872	1874	6,000.00	.....	.....	.....	.....	6,000.00	
1874	1875	6,000.00	.....	.....	.....	.....	6,000.00	
1874	1876	6,000.00	.....	.....	.....	.....	6,000.00	
1876	1877	6,000.00	.....	.....	.....	.....	6,000.00	
1876	1878	4,500.00	.....	.....	.....	.....	4,500.00	Changing fiscal year from January 1st to October 1st.
1878	1879	6,000.00	.....	.....	.....	.....	6,000.00	

1878	6,000.00	6,000.00	"And no more." "And no more." "And no more." "And no more." "And no more." "And no more." "And no more." "And no more." "And no more." "And no more." Accepted Act of Congress regarding Hatch Fund.
1880	5,000.00	.....	.....	5,000.00
1881	5,000.00	.....	.....	5,000.00
1882	5.00	.....	.....	5.00
1883	5.00	.....	.....	5.00
1884	5.00	.....	.....	5.00
1885	5.00	.....	.....	5.00
1886	5.00	.....	.....	5.00
1887	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1889	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00
1888	5.00	.....	.....	5.00

TABLE No. 15A—Continued

APPROPRIATIONS TO THE MARYLAND AGRICULTURAL COLLEGE—Continued

Date of Appr'n	For Year	Maintenance	Buildings	Equipment	Deficiency in Interest	Special Appropriation	Total	Remarks
1904	1905	.....	.....	.....	2,318.88	.....	2,318.88	Deficiency in interest.
1904	1906	.....	.....	.....	2,318.88	.....	2,318.88	
1906	1907	15,000.00	.....	.....	.....	.....	15,000.00	Accepted Act of Congress regarding Adams Fund.
1906	1907	.....	.....	.....	.....	8,000.00	8,000.00	For indebtedness for heating new buildings.
1906	1907	.....	8,000.00	.....	.....	.....	8,000.00	For buildings erected without approp.
1906	1907	.....	6,000.00	.....	.....	.....	6,000.00	For repairs on boilers.
1906	1907	.....	.....	.....	2,318.88	.....	2,318.88	Deficiency in interest.
1906	1907	.....	.....	.....	.....	6,742.10	6,742.10	For outstanding indebtedness.
1906	1908	15,000.00	.....	.....	.....	.....	15,000.00	
1906	1908	.....	.....	.....	.....	.....	2,000.00	For Steam Laundry.
1906	1908	.....	\$2,000.00	.....	2,318.88	.....	2,318.88	
1908	1909	\$15,000.00	.....	.....	.....	.....	15,000.00	For Engineering Buildings.
1908	.....	.....	30,000.00	.....	.....	.....	30,000.00	
1908	.....	.....	.....	.....	2,318.88	.....	2,318.88	
1908	1910	15,000.00	.....	.....	.....	.....	15,000.00	For building repairs.
1908	1910	.....	5,000.00	.....	.....	.....	5,000.00	
1908	1910	.....	.....	.....	2,318.88	.....	2,318.88	
1910	1911	16,000.00	.....	.....	.....	.....	16,000.00	
1910	1911	.....	.....	.....	2,318.88	.....	2,318.88	
1910	1912	16,000.00	.....	.....	.....	.....	16,000.00	Equipment Engineering Building and Barn.
1910	1912	.....	.....	5,000.00	.....	.....	5,000.00	
1910	1912	.....	1,600.00	.....	.....	.....	1,600.00	For deficiency in Heating Plant.
1912	1913	16,000.00	.....	.....	.....	.....	16,000.00	Additional \$10,000 asked for, but dis- allowed by Governor.
1912	1914	20 16,000.00	.....	.....	.....	.....	16,000.00	
1912	1913	.....	.....	.....	2,318.88	2,318.88	2,318.88	
1912	1914	.....	.....	.....	2,318.88	.....	2,318.88	

1914	1914	.....	2,318.88	.....	2,318.88
1914	1916	16,000.00	16,000.00	.....	16,000.00
1914	1915	2	2,047.44	.....	2,047.44
1914	1916	13	2,047.44	.....	2,047.44
1916	1917	174,000.00	.....	.....	174,000.00
1916	1917	2 1/2 40,000.00	.....	.....	40,000.00
1916	1918	4 1/2 40,000.00	.....	.....	40,000.00
1916	1917	.....	2,047.44	.....	2,047.44
1916	1918	.....	2,047.44	.....	2,047.44
1918	1919	9 1/2 92,259.00	.....	.....	92,259.00
1918	1920	5 1/2 92,259.00	.....	.....	92,259.00
1918	1919	.....	2,047.44	.....	2,047.44
1918	1920	.....	2,047.44	.....	2,047.44
1920	1921	35 165,476.89	203,000.00	20,000.00	390,524.33
1920	1922	165,476.89	2,047.44	.....	167,524.33
Totals	.....	\$1,007,016.78	\$525,600.00	\$82,742.10	\$1,661,111.64

For Agricultural Building.
New charter and name changed to
Maryland State College of Agri-
culture.

For Silvester Hall and Practice
House (\$125,000), balance of build-
ing appropriation for equipment
and repairs.

TABLE No. 16
FEDERAL APPROPRIATIONS FOR MARYLAND AGRICUL-
TURAL COLLEGE (NOW UNIVERSITY OF MARYLAND)

	Hatch Fund	Adams Fund	Morrill- Nelson Fund	Federal Smith- Lever	Special Extension	U. S. Dept. of Agri- culture
1888	\$15,000					
1889	15,000					
1890	15,000		\$15,000			
1891	15,000		16,000			
1892	15,000		17,000			
1893	15,000		18,000			
1894	15,000		19,000			
1895	15,000		20,000			
1896	15,000		21,000			
1897	15,000		22,000			
1898	15,000		23,000			
1899	15,000		24,000			
1900	15,000		25,000			
1901	15,000		25,000			
1902	15,000		25,000			
1903	15,000		25,000			
1904	15,000		25,000			
1905	15,000		25,000			
1906	15,000	\$15,000	25,000			
1907	15,000	15,000	25,000			
1908	15,000	15,000	30,000			
1909	15,000	15,000	35,000			
1910	15,000	15,000	40,000			
1911	15,000	15,000	45,000			
1912	15,000	15,000	50,000			
1913	15,000	15,000	50,000			
1914	15,000	15,000	50,000	\$10,000.00		
1915	15,000	15,000	50,000	17,746.73		
1916	15,000	15,000	50,000	24,202.43		
1917	15,000	15,000	50,000	30,657.95		
1918	15,000	15,000	50,000	37,113.56		
1919	15,000	15,000	50,000	43,569.17	\$19,366.83	
1920	15,000	15,000	50,000	50,366.83	19,366.83	\$15,000
1921	15,000	15,000	50,000	50,642.34	16,934.31	19,000
	<hr/> \$495,000	<hr/> \$240,000	<hr/> \$1,045,000	<hr/> \$264,299.01	<hr/> \$55,667.97	<hr/> \$34,000
Hatch Fund.....	\$495,000.00					
Adams Fund.....	240,000.00					
Morrill-Nelson Fund.....	1,045,000.00					
Federal Smith-Lever Fund.....	264,299.01					
Special Extension.....	55,667.97					
United States Department of Agriculture.....	34,000.00					
	<hr/>					
	\$2,133,966.98					

TABLE No. 45B

APPROPRIATIONS TO THE MARYLAND AGRICULTURAL COLLEGE—SPECIAL FUNDS

Date of App'n	For Year	State Hort.	Experiment Station	Farmers' Institute	Tobacco Investig'n	Hort. Investig'n	Biological Laboratory	Seed Inspec'n	General Extens'n	State Smith-Lever	County Demonst'n	Executive Expenses	State Dairymen's Ass'n	Soil Fund	Ridgely Farm	Eastern Branch	Live Stock Sanitary	Hog Cholera Eradication
1898	1899	\$10,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1898	1900	8,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1900	1901	8,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1900	1902	8,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1902	1903	8,000	\$5,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1902	1904	8,000	5,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	1905	8,000	5,000	\$6,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	1906	8,000	5,000	6,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1906	1907	8,000	5,000	6,000	\$5,000	\$4,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1906	1908	8,000	5,000	6,000	5,000	4,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1908	1909	8,000	5,000	6,000	.....	4,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1908	1910	8,000	5,000	6,000	.....	4,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1910	1911	8,000	5,000	6,000	.....	4,000	\$5,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1910	1912	8,000	5,000	6,000	.....	4,000	5,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1912	1913	8,000	5,000	6,000	.....	4,000	.....	\$2,000	\$3,000	.....	.....	.....	.....	\$10,000	.....	.....	.....	.....
1912	1914	8,000	5,000	6,000	.....	4,000	.....	2,000	3,000	.....	.....	.....	.....	20,000	.....	.....	.....	.....
1914	1915	8,000	5,000	6,000	.....	4,000	.....	3,000	3,000	.....	.....	.....	.....	.....	\$14,000	\$500	.....	.....
1914	1916	8,000	5,000	6,000	.....	4,000	.....	3,000	3,000	7,640.33	.....	.....	.....	.....	1,500	500	.....	.....
1916	1917	8,000	25,000	6,000	.....	.....	5,000	5,000	5,000	14,202.31	\$23,000	\$5,000	.....	.....	5,000	5,000	.....	.....
1916	1918	8,000	25,000	6,000	.....	.....	5,000	5,000	5,000	20,659.00	23,000	5,000	.....	.....	5,000	5,000	.....	.....
1918	1919	8,000	27,000	.....	.....	.....	5,600	6,100	5,060	27,112.93	48,000	5,000	\$5,000	.....	5,000	7,500	\$35,000	.....
1918	1920	8,000	27,000	.....	.....	.....	5,600	6,100	5,060	28,112.93	48,000	5,000	5,000	.....	5,000	6,500	35,000	.....
1920	1921	8,000	41,900	.....	.....	.....	5,500	7,000	5,000	50,030.95	48,000	5,000	5,000	.....	5,000	12,420	46,400	\$10,000
1920	1922	8,000	41,900	.....	.....	.....	5,500	7,000	5,000	46,480.39	48,000	5,000	5,000	.....	5,000	12,420	46,400	10,000
Totals.....		\$194,000	\$257,800	\$84,000	\$10,000	\$40,000	\$42,200	\$46,200	\$42,120	\$194,238.87	\$238,000	\$30,000	\$20,000	\$30,000	\$45,500	\$49,840	\$162,800	\$20,000

SCHEDULE No. 1
UNIVERSITY OF MARYLAND
BALTIMORE SCHOOLS
CASH BALANCES SEPTEMBER 30, 1921

Balance, School of Law.....	\$22,245.38
Balance, School of Dentistry.....	1,340.61
Balance, School of Commerce.....	1,583.55
Balance, School of Pharmacy.....	15.68
<hr/>	
Total credit balance.....	\$26,184.22
Less overdraft, School of Medicine.....	8,145.86
<hr/>	
Net credit balance.....	\$18,038.36

Note—The balance shown above contains \$20,180 collections from students account of the 1921-1922 sessions; \$2,141.66 of this amount was used account of payroll expense in the month of September, 1921.

UNIVERSITY OF MARYLAND
BALTIMORE SCHOOLS
SUMMARY OF RECEIPTS AND EXPENDITURES
Biennium ended September 30, 1921

Net cash expenditures.....	\$453,750.09	
Net cash receipts.....		\$445,396.33
Balance, October 1, 1919.....		26,392.12
Accounts receivable, students.....		1,758.93
Accounts receivable, Federal Board.....		785.89
Accounts receivable, Hospital.....		500.00
Accounts receivable, book store.....		32.98
Unpaid bills, September 30, 1921.....	16,840.59	
Loans due Union Trust Company—		
School of Medicine.....	23,000.00	
School of Dentistry.....	10,000.00	
Outstanding Mortgages—		
Commonwealth Bank.....	15,000.00	
Calvert Bank.....	15,000.00	
<hr/>		
	\$533,590.68	\$474,866.25
Deficit, September 30, 1921.....		58,724.43
<hr/>		
	\$533,590.68	\$533,590.68

Note—The balance shown above on October 1, 1919, contains approximately \$17,000 collections from students account of the 1919-1920 sessions.

SCHEDULE No. 2
UNIVERSITY OF MARYLAND
BALTIMORE SCHOOLS

	1919-20
EXPENSES	1920-21
Salaries and wages.....	\$216,914.91
Laboratory supplies and equipment.....	37,250.64
Clinical supplies (dental).....	11,051.95
Repairs to property.....	11,354.46
Repairs to dwellings.....	584.44
Repairs to microscopes.....	142.43
Furniture and fixtures.....	1,446.89
Traveling.....	1,166.38
Freight and express.....	461.25
Gas and electricity.....	1,628.91
Telephone.....	722.36
Fuel.....	3,207.10
Student refunds.....	1,435.89
Publishing and advertising.....	17,750.17
Insurance.....	7,410.72
Interest, bonds and mortgages.....	31,089.72
Sinking funds.....	5,950.00
Water rents, etc.....	4,668.39
Interest on loans.....	1,768.91
Office supplies and expenses.....	6,313.12
General supplies.....	691.25
Janitor's supplies.....	86.60
Outside obstetrics.....	10,012.27
Association dues.....	472.00
Special improvement (dental).....	3,573.96
Rent, office, etc.....	751.00
Examination expense (law).....	335.00
Central office.....	8,379.81
Library.....	6,422.29
General expense.....	1,251.08
Miscellaneous.....	1,386.78
Prizes.....	200.00
Commencement and entertainment.....	3,295.31
P. & S. Building—	
Operating room.....	3,973.33
Dispensary	2,719.55
Repairs and alterations.....	4,073.57
Heat and light.....	11,369.07
Telephone.....	810.00
Laundry supplies.....	54.68
Janitor supplies.....	152.78
General supplies.....	222.48
Miscellaneous.....	106.25

Net expenses.....

\$422,657.70

SCHEDULE No. 2—Continued

Payment of loans.....	\$40,500.00	
Payment of mortgage.....	6,000.00	
Petty cash fund.....	900.00	
Loan, University Hospital.....	500.00	
Loan, book store.....	32.98	
	<hr/>	\$47,932.98
Total expenses.....		<hr/> \$470,590.68

RECEIPTS

State appropriations, medicine.....	\$67,500.00	
City of Baltimore, account outside obstetrics	14,450.00	
Student fees.....	\$225,157.70	
Student fees, account 1921-22.	20,180.00	
	<hr/>	245,337.70
Summer courses.....	750.00	
Special courses.....	1,595.00	
Breakage.....	355.45	
Duplicate diplomas.....	190.50	
Rent, dwellings.....	1,803.00	
Rent, P. & S. Building.....	6,337.72	
Rent, microscopes.....	94.00	
Registration receipts.....	576.00	
Sundries.....	9,266.05	
Practical anatomy.....	1,105.00	
P. & S. Dispensary.....	1,146.81	
Interest on deposits.....	402.25	
Discount, vouchers payable.....	190.97	
Reserve account.....	1,231.96	
Infirmery (dental).....	16,779.21	
I. H. Davis Fund (dental).....	2,339.92	
Maryland General Hospital.....	250.00	
Mercy Hospital.....	71.79	
Skeletons.....	18.00	
Re-examination fees.....	105.00	
Loans—Union Tr. Co. and Western Nat. Bk.		
School of Medicine.....	\$63,500	
School of Dentistry.....	10,000	
	<hr/>	73,500.00
Total receipts.....		<hr/> \$445,396.33

SCHEDULE No. 3

UNIVERSITY HOSPITAL UNIVERSITY OF MARYLAND

SUMMARY OF CASH RECEIPTS AND EXPENDITURES FOR THE BIENNIUM ENDING SEPTEMBER 30, 1921

Cash on hand, September 30, 1919.....	\$562.03	
Cash receipts for biennium.....	556,539.94	
Total cash available for biennium.....	\$557,101.97	
Unpaid bills, September 30, 1919.....	\$36,930.77	
Total bills paid for the biennium 1920-1921..	513,641.45	
Total bills paid during biennium..	\$550,572.22	
Cash balance, September 30, 1921..	6,529.75	
	\$557,101.97	\$557,101.97
Unpaid bills, September 30, 1921.....		\$46,707.13
Cash on hand, September 30, 1921.....	\$6,529.75	
Bills receivable.....	12,805.74	
		19,335.49
Net deficit.....		\$27,371.64

STATEMENT OF OPERATION OF THE UNIVERSITY HOSPITAL. Biennium Ending September 30, 1921

CASH RECEIPTS

Patients—

State	\$35,665.40
City.....	24,179.50
British Consul.....	11,575.58
Private.....	171,805.63
Ward.....	134,714.27
Operating-room.....	37,688.44
X-rays.....	36,529.03
Nurses' board.....	26,959.17
Dispensary.....	8,935.51
Accident room.....	4,475.73
Skin clinic.....	2,202.95
Drugs.....	4,137.21
Ambulance.....	558.29
Maternity.....	25.00
Laboratory fee.....	12,498.75

SCHEDULE No. 3—Continued

General—

Telephone and telegraph.....	2,042.38
Soft drinks.....	605.48
Laundry.....	199.89
Dry goods and notions.....	1,411.08
Nurses' Training School.....	408.84
Breakage.....	74.90
Meals.....	1,723.91
Groceries and provisions.....	781.45
Medical and surgical supplies.....	1,171.63
Sale of grease and bones.....	276.06
Cots.....	398.33
Payroll.....	1,042.49
Miscellaneous.....	1,392.43
Accounts paid (one paid bill).....	16.73
Commission on taxi.....	5.15
Commission on scales.....	2.04
Commission on telegrams.....	2.32
Commission on drinking cups.....	3.91
Commission on eye glasses.....	81.12
Electric fans.....	182.75
Sundries.....	92.54
Doctors' and nurses' funds.....	885.64
Donations.....	16,288.36
Loans.....	15,500.00

\$556,539.94

EXPENSES

Meats.....	\$27,119.97
Fish.....	3,200.48
Poultry.....	8,386.73
Butter and eggs.....	18,522.29
Milk and cream.....	21,765.38
Fruit and vegetables.....	13,336.11
Groceries.....	57,651.87
Ice.....	9,960.55
Coal.....	30,780.13
X-ray supplies.....	13,823.92
Hospital stationery.....	6,574.47
Household supplies.....	7,504.90
New equipment.....	5,846.80
Medicines and drugs.....	12,667.22
Medical and surgical supplies.....	40,785.35
Medical stationery.....	1,778.84
Dry goods.....	12,134.23
Maintenance machinery.....	3,092.48
Maintenance equipment.....	10,495.53
Maintenance buildings.....	18,182.68

SCHEDULE No. 3—Continued

Nurses' Training School.....	3,348.00	
Light and heat.....	3,174.28	
Telephone and telegraph.....	3,517.83	
Rent.....	740.00	
Laundry supplies.....	4,159.13	
Advertising.....	157.91	
Laboratory supplies.....	1,561.40	
Spring water.....	117.48	
Hospital expenses.....	1,772.44	
Ambulance.....	606.00	
Entertainment.....	20.00	
Legal fees.....	313.88	
Water rent.....	1,403.24	
Drinking cups.....	182.28	
Insurance.....	190.30	
Auditing.....	316.14	
Dispensary supplies.....	38.10	
Sundries.....	5,862.00	
Money stolen from patient and returned....	151.00	
Refunded to patients.....	97.50	
Traveling expenses.....	44.54	
		<hr/>
		\$351,383.38
Salaries and Wages—		
Office.....	\$23,943.73	
Kitchen and dinnig-room.....	8,124.41	
Housekeeping department.....	53,192.09	
Engine-room.....	18,832.85	
Laundry.....	12,735.32	
Doctors and nurses.....	55,727.18	
Dispensary.....	6,268.04	
Skin clinic.....	550.00	
Laboratory	8,929.93	
X-ray	4,030.00	
Accident room.....	440.00	
Social worker.....	691.65	
		<hr/>
		\$193,465.20
Loans.....		15,500.00
		<hr/>
		\$560,348.58
Unpaid bills, September 30, 1921.....	\$46,707.13	
Accounts receivable, September 30, 1921...	12,805.74	
Cash on hand in bank, September 30, 1921..	6,529.75	

Figures in Schedules I to III for receipts and expenditures of the Schools of Medicine, Law, Dentistry, Pharmacy and Commerce located at Baltimore submitted by

MR. GEORGE S. SMARDON, *Comptroller*.

Office of the Registrar

*The President of the University,
College Park, Md.*

Sir: The following statistics show the registration of students during the regular school years 1919-1920, 1921-22 (as of December 10, 1921), and the Summer School sessions of 1919, 1920 and 1921.

The figures in this report refer to the number of students attending the University since the last biennial report was published and are significant in themselves.

Total registration for the three years as indicated:

	1919-20	1920-21	1921-22
College of Agriculture.....	213*	218*	190†
College of Arts and Sciences.....	95	106	198
School of Commerce (Organized September 26, 1921).....	..	..	240
School of Dentistry.....	119	160	204
College of Education.....	59	40	72
College of Engineering.....	108	114	164
Graduate School.....	13	23	23
College of Home Economics.....	2	21	17
School of Law.....	346	491	490
School of Medicine.....	278	258	306
School for Nurses.....	71	55	69
School of Pharmacy.....	77	84	93
Summer School.....	201	208	380
Extension Courses	40	55	75
Totals.....	1622	1833	2521

*These figures include premedical students since transferred to the College of Arts and Sciences.

†This figure does not include students taking agricultural education.

Total registration—College Park:

	1919-20	1920-21	1921-22
College of Agriculture.....	213	218	190
College of Arts and Sciences.....	95	106	198
College of Education.....	59	40	72
College of Engineering.....	108	114	164
Graduate School.....	13	23	23
College of Home Economics.....	2	21	17
Summer School.....	201	208	380
Extension Courses.....	40	55	75
Totals.....	731	785	1119

Total registration—Baltimore:

	1919-20	1920-21	1921-22
Extension Courses of the School of Commerce (Organized Sept. 26, 1921).....	..	..	240
School of Dentistry.....	119	160	204
School of Law.....	346	491	490
School of Medicine.....	278	258	306
School of Nurses.....	71	55	69
School of Pharmacy.....	77	84	93
Totals.....	891	1048	1402

Percentage of increase in registration of 1920-21 over 1919-20
13.01 per cent.

Percentage of increase in registration of 1921-22 over 1920-21
37.53 per cent.

Percentage of increase in registration of 1921-22 over 1919-20
55.43 pre cent.

The geographical distribution of students shows that within a very small fraction of 70 per cent, 69.11 per cent to be exact, of the students registered in the University of Maryland in the last three years come from Maryland.

It is interesting to note the number of students registered at College Park in collegiate work since 1910, when the institution was the Maryland Agricultural College until now, when it is in operation under University Standards. In 1910 there were 26 students studying agriculture out of a total of 113 of collegiate grade. This number seems to have increased slowly until the scholastic year 1919-20 when there was a big jump. At present there are 172 students of standard collegiate grade registered in the College of Agriculture. Also, it is true that the figures for 1919-20 and 1920-21 included premedical students who in the 1921-22 figure are catalogued in the College of Arts and Sciences. The phenomenal growth of the institution in educating students for agriculture is shown by the fact that there are at present taking agriculture, either as students in the College of Agriculture, in the College of Education, or agricultural students of non-collegiate grade, a total of 209, more than were registered at any time in the old Maryland Agricultural College in agriculture, engineering and general science combined; or in the Maryland State College of Agriculture prior to 1919. Engineering and the other groups have not shown the great growth that has agriculture, but there has been a steady increase of students in all branches.

The following table gives an idea of the growth of the College Park institution in the number of students registered in the various departments of work for the last ten years:

TABLE OF STUDENT REGISTRATION AT COLLEGE PARK
SINCE 1910 IN REGULAR COLLEGIATE WORK.

Maryland Agricultural College.

	Agri- culture	Engi- neering	General Science	Education	Home Eco- nomics	Arts and Sciences	Total
1910-11....	26	64	23	..	..	..	113
1911-12....	36	66	23	..	..	..	125
1912-13....	35	62	26	..	..	..	123
1913-14....	64	75	29	..	..	..	168
1914-15....	76	62	34	8	..	..	180
1915-16....	93	62	37	9	..	..	201

Maryland State College.

1916-17....	88	55	30	11	..	..	184
1917-18....	71	42	24	3	..	..	140
1918-19....	62	65	35	17	..	..	179
1919-20....	*175	97	..	39	2	95	408

University of Maryland.

1920-21....	†195	107	..	32	21	106	461
1921-22....	172	164	..	58	17	198	609

*Includes premedical students—12.

†Includes premedical students—23.

The work of the Registrar's Office has been thoroughly organized at College Park and a great deal of time has been given during the past year to reorganizing and establishing on a solid basis the Registrar's work in Baltimore. Considerable progress has been made and the registration system for the entire University is well in hand.

Respectfully submitted,

W. M. HILLEGEIST, *Registrar.*

The Extension Service

*The President of the University,
College Park, Md.*

Sir: The agricultural industry in Maryland, as in other States, has passed through a difficult period during 1920 and 1921. In 1920 the farmers were required to plant under high costs and to reap in the face of falling markets. Conditions have not improved much during 1921. While initial costs of supplies have been reduced, the extreme levels that staple farm products have reached, such as grain and live stock, have rendered the task of the farmer more difficult perhaps than those engaged in any other industry. As an illustration, upon the basis of 1920 yields of cereals in Maryland, the farmers of the State stood to take a loss of approximately \$18,770,229 between the time of seeding and December, 1920. This state of affairs has placed an unusual responsibility and at the same time offered an unusual opportunity to the Extension Service forces of the University to render service to the farmers and people of the State.

While the service has experienced a reduction in funds by the withdrawal of war appropriations by the Government, we have been enabled to maintain a man and woman agent in practically all counties of the State and to meet the constantly increasing demands made upon us.

Notwithstanding the economic slump and the consequent demand of the public for a reduction in taxes, the county appropriations for Extension and county agent work, provided in the county budgets, have greatly increased during the past two years. This indicates a real appreciation of the rural people of the service that is being rendered.

While the present outlook for the agricultural industry, economically, may be interpreted as rather gloomy, it has its bright side and we believe that the new era in agriculture which we are approaching holds out tremendous possibilities for those who engage in the industry upon the proper basis and with the proper viewpoint. We believe there has been greater progress in efficiency in the agricultural industry in Maryland during the past five years than in any other industry.

A study of the figures for production during the past few years will indicate that more and better farming has been conducted during and since the war period, with considerably less labor, than ever before. In our great corn crop, for instance, the average yield of corn per acre in 1919 was 34 bushels, while in 1909 the average yield

was 27.7 bushels. A greater amount of labor-saving machinery is being used effectively.

The greatest result, however, that is evident upon all sides is the awakening among the farming population of the importance of organization and co-operation for the success of the business. The farmers are now determined that they will not continue to produce for less than cost of production and that they will perfect machinery so that their products can be marketed to advantage, as far as possible, so that there may be a reduction in the spread between the producer and consumer. This involves co-operative organization among farmers, proper basis of finance, better systems of grading and standardization of products, marketing, transportation and distribution.

The outlook for successful co-operative enterprises among farmers of the State was never so bright as today. Great progress has been made during the past year in the formation of business associations for the sale of farm products and the purchase of farm supplies. For the past four years a substantial appropriation has been requested in the Extension Service budget for marketing work. It has been disallowed by the two previous legislatures. It is hoped that an ample appropriation will be made this year to enable the service to carry on a sane, conservative program for improving the means of marketing farm crops in the State.

A brief summary of the work of the service will be given under the respective projects. Figures relating to demonstration work and otherwise will of necessity relate to the calendar year 1920, as reports for 1921 will not be available until after January 1st, 1922.

The administration of the Extension Service during the past two years has been carried on as heretofore. No changes have been made in the offices except that of District Agent. Owing to limited funds and the demand for increased salaries, it was necessary to delay the appointment of an assistant for supervisory work as District Agent among the men agents. As a result, the work of the Director and Assistant Director has been more arduous. A splendid spirit of cooperation animates everyone in the service and the relations of the service to other divisions of the University, State Department of Public Instruction, U. S. Department of Agriculture and other agencies have been most agreeable.

During the past spring the Director was absent for four months, studying conditions in Europe, especially co-operative organization and marketing. This thrust additional burdens and responsibilities upon the Assistant Director, who served as Acting Director during this period with satisfaction to all concerned.

A detailed statement of the expenditure of the funds available for the fiscal year ending June 30, 1920, is given in the full report. The growing appreciation of the county agent as reflected in the constantly increasing appropriations from the county commissioners is very encouraging and indicates the stability of the work. The policy of

nating county agent work supported from public funds only, including Federal, State and County, is wise and in the interest of public service. It is unnecessary to point out here that the service is tremendously handicapped at present to carry forward many lines of work that are demanded by the farmers and home makers and unable to properly support those now working with the service on account of limited finances.

Monthly conferences of the agents are held in various sections of the State. At these conferences plans of work are discussed and methods for increasing efficiency and advancing the extension activities by all forces are perfected. Annual conferences of all agents are held once a year. Definite programs of work are agreed to by specialists and agents in consultation with local authorities and farmers' organizations. Each agent and specialist submits weekly and yearly reports. Maps accompany yearly reports visualizing the work in all sections of the State.

On account of the necessity for curtailment of expenses, funds allotted to publications have been reduced. The State College Journal, which was changed to be designated as the Extension Service News July 1st, 1920, has been published monthly by the service. Timely articles relating to the work of specialists and agents are presented in brief but comprehensive style. A total of about 100,000 copies, with 400,000 pages, have been issued.

A large amount of circular matter has been distributed to the agents and farmers.

Mr. M. D. Bowers was employed May 1st, 1920, as Assistant in Agricultural Journalism. He has directed his efforts towards preparing press matter for the daily and weekly papers to stimulate the development of those phases of rural work with which the Extension Service is concerned and to emphasize the importance of the agricultural industry to the welfare of the State.

During 1920 eighty-three bulletins were sent to both daily and weekly papers. Results as indicated from the two morning newspapers in Baltimore and from many weekly newspapers show that this material generally has been used. The Maryland Farmer has been generous in placing its space at the disposal of the Extension Service.

The work of the service is conducted under regular projects by the respective leaders. All projects are planned in advance and approved by the States Relations Service of the U. S. Department of Agriculture.

The county demonstration work has made excellent progress in the State during the past biennium. We have been able to maintain an agent in all the counties of the State. In the great majority of counties the county agent is recognized as an indispensable assistant to the farmers. We have been fortunate in maintaining an able force of agents who have worked most earnestly to improve the condition in their respective counties. The outstanding feature of the year's work is the co-operation of the farmers' organizations

in assisting the agents in carrying forward their program of work. All projects in agriculture are carried out through the agents. The specialists co-ordinate their work with the agents by practical demonstrations in the field.

The County Agent's position is the most difficult in the agricultural field to fill. It is also the most strenuous job when an agent endeavors to meet all the demands that are made upon him. During the season of 1920 the county agents made 18,337 visits to farmers; they had 27,999 visits or calls upon them for information at their offices; they traveled 188,266 miles in the counties and a total of 2,406 meetings were held, with an attendance of 184,199.

The following agents are serving in their respective counties:

Name	County	Headquarters
R. F. McHenry.....	Allegany.....	Cumberland
G. W. Norris.....	Anne Arundel.....	Annapolis
E. E. McLean.....	Baltimore	Towson
J. H. Drury.....	Calvert	Chaney
W. C. Thomas.....	Caroline	Denton
F. W. Fuller.....	Carroll	Westminister
A. D. Radebaugh.....	Cecil	Elkton
J. P. Burdette.....	Charles	La Plata
P. W. Moore.....	Dorchester	Cambridge
P. A. Hauver.....	Frederick	Frederick
J. A. Towler.....	Garrett	Oakland
B. B. Derrick.....	Harford	Bel Air
R. L. Post.....	Howard	Ellicott City
H. B. Derrick.....	Kent	Chestertown
W. C. Snarr.....	Montgomery	Rockville
W. B. Posey.....	Prince George's.....	Upper Marlboro
O. C. Jones.....	Queen Anne's.....	Centreville
G. F. Wathen.....	St. Mary's.....	Loveville
C. Z. Keller.....	Somerset	Princess Anne
E. P. Walls.....	Talbot	Easton
G. R. Cobb.....	Wicomico	Salisbury
E. I. Oswald.....	Worcester.....	Snow Hill
S. E. Day.....	Washington	Hagerstown

Local Agents

J. F. Armstrong (col.)...	Southern Maryland...	Seat Pleasant
L. H. Martin (col.)...	Eastern Shore.....	Princess Anne

Summary of Men's Work

The following summary of work conducted is taken from the agents' reports:

Crop	Number of Demonstrations	Average Yield per Acre
Corn	320	67.73 bushels
Wheat	160	19.5 bushels
Oats	18	51.2 bushels
Rye	71	20 bushels
Buckwheat	10	30 bushels
Barley	31	36 bushels
Tomatoes	200	190 bushels
Tobacco	49	805 pounds
Alfalfa	253	4 tons
Red Clover.....	67	2.4 tons
Crimson Clover.....	173	
Sweet Clover.....	23	3.2 tons
Japan Clover.....	6	2 tons
		(grain)
Soy Beans.....	249	16.4 bushels
Vetch	26	(hay) 2.5 tons
Mixed Grass.....	7	3.5 tons
Sudan Grass.....	7	2.6 tons
		3.5 tons
Cow Peas.....	101	(seed) 12 bushels
		(hay) 2.5 tons
Canning Peas.....	17	847 pounds
Irish Potatoes.....	230	231 bushels
Sweet Potatoes.....	30	266 bushels
Orchards	1163	Instructed in the culture of 341,680 trees.
Dairy Cattle.....	70	Pure bred bulls and 638 registered heifers were brought into the State as a result of the activities of the agents.
Beef Cattle.....	7	Pure bred bulls and 13 pure bred heifers have been brought into the State through the agents' influence.
Hogs	90	Pure bred boars and 479 pure bred gilts have been purchased by demonstrators.
Sheep	9	Pure bred rams and 23 pure bred ewes have been purchased as the result of the agents' influence.
Poultry	103	Demonstrations involving
		19,463 chickens
		427 ducks
		100 guineas
		1,180 turkeys
		400 geese
		<hr/> 21,570
		have been carried on under methods advocated by the county agents.

Livestock Diseases
and Pests..... 29,841

Head of live stock have been treated for diseases at the suggestion of county agents and specialists.

Fertilizer 7,22

Farmers followed suggestions of the county agents relating to better care and handling of fertilizers; 2,711 tons of fertilizer were purchased at the agents' suggestion at a saving of \$22,972.

Manure 1,437

Farmers following suggestions of the agents relating to the better care and handling of manure. The agents placed 127 manure spreaders on demonstration farms.

Silos 303

Silos were built under the direction of the county agents.

Lime 1,551

Farmers used lime under the direction of the county agents.

Organization 67

Farmers' organizations, membership 4,286, formed during the year.

Total in State at present time 405 farmers' organizations with a membership of 18,781.

A conservative estimate of the increase in dollars and cents resulting from farm crops grown as demonstrations under the agents and specialists amounts to \$650,000.

Substantial progress has marked the work of the Home Demonstration specialists and agents in the State during the past year. The farm women are beginning to appreciate more fully the possibilities of this work to aid them in their manifold activities on the farm and in the home. Miss Venia Kellar, who is in charge of this work, reports great difficulty in securing trained agents and retaining them upon the present basis of salaries and travel allowances.

The work with farm women includes: 1. The clothing problem, including home dressmaking selection and testing of materials, utilization of materials on hand, adaptation of patterns, short cuts in sewing, methods of cleaning and renovation, special clothing features, home millinery, etc. 2. Conservation of woman power, including power machinery, labor-saving devices, proper laundry equipment, rearrangement of equipment to lessen kitchen mileage, proper working levels, running water in the kitchen, etc. 3. Home budgets. 4. Practical Dietetics. 5. Health and Sanitation. 6. Beautifying Farm Home and interior decoration. 7. Recreation. 8. Marketing. 9. Community

Organization. 10. Stimulating interest in agricultural exhibits and fairs. 11. Farmers' Institutes and Short Courses. 12. Co-operation with various organizations to promote health and social welfare.

While the Girls' Club Work is a co-ordinated part of the Home Demonstration Work for purposes of administration and results, Miss Adice S. Jones, Asst. Club Leader, is charged with supervising this phase of the work in the counties. The project has been developed along the following lines: First, extending club work by means of the co-operative school plan adopted in Sept., 1919; second, to still further develop club work by bringing the work before the people of the community; third, formation of Junior County Organization; fourth, county camps and picnics; fifth, State club work; sixth, county short course for girls; seventh, thrift and saving among girls; eighth, to continue bringing about more definite results in club work, at the same time standardizing the work throughout the State in gardening, poultry, canning and other cookery, household furnishing, sewing, millinery, expense accounts and budgets.

During the past year much emphasis has been placed upon the food value of milk from healthful and economic standpoints with a view of increasing its consumption among all classes of people. Demonstrations and lectures on the food value of milk, the care of milk and milk dishes have been staged at community shows, community picnics, county fairs and lawn fetes. Girls' Clubs all over the State have given the "Milk Fairy Play," and this little play has done much to teach the children the food value of milk and enticed them to drink more milk.

Demonstrations in milk booths and selling various milk drinks have been most popular. More than 20,000 milk drinks have been sold by our agents at various public events.

Due to limited funds, only one colored woman agent has been employed during the past year. This agent, Miss Woodson, has done splendid work in Southern Maryland, especially Charles County. There were fourteen Girls' Clubs and eleven Women's Clubs. The agent visited 23 out of the 30 colored schools in the county. The principal work of the agent lay in arousing the colored people to better habits of life, better homes and a better citizenship. The agent reports the most fruitful results in the demonstrations for fixing homes and rooms by the girls and women. One colored club girl cleaned and fixed over the whole home after the beginning of the campaign. This girl papered two rooms, painted three and purchased a kitchen cabinet with money earned by her club efforts.

SUMMARY

The following summary of all Home Demonstration work is submitted by Miss Kellar:

Consulations at home office.....	9,531
Visits to demonstrators, homes, schools and clubs.....	4,660

Bulletins distributed.....	21,065
Letters written.....	19,538
Meetings held	3,366
Miles traveled.....	86,023
Number of exhibits, fairs, poultry shows, etc.....	107
Number of women influenced by home demonstration work...	14,392
Demonstrations given by agents to groups of women.....	991
Utilization of Vegetables.....	61
Dairy Products.....	51
Poultry Products.....	62
Bread Making.....	60
Child Feeding.....	133
Invalid Cookery.....	19
Cookery under steam pressure.....	125
Fireless cooker.....	46
Canning	140
Drying	28
Brining	5
Laundry	13
Clothing	139
Home conveniences.....	49
Kitchen arrangement.....	27
Improving home grounds.....	33
Total demonstrations given.....	991
Estimated total attendance of women at demonstrations...	12,487
Number of women giving demonstrations.....	358
Number of women making bread under direction of home demonstration agents.....	383
Number of bread exhibits.....	91
Number of gardens grown.....	661
Number of cans of meat put up.....	3,443
Number of pounds of lard made.....	65,500
Number of gallons of vinegar made.....	4,480
Number of demonstration centers established.....	7
Number of women keeping household accounts.....	234
Number of labor-saving devices installed.....	179

GIRLS' WORK

Number of girls enrolled in poultry work.....	868
Number of girls enrolled in garden work.....	269
Total number of containers canned from 1-10 acre gardens..	21,381
Value of crops raised on 1-10 acre gardens.....	\$6,768.77
Number of girls' clubs.....	240
Total number of girls enrolled.....	4,099
Number of girls completing first-year work.....	800
Number of girls completing second-year work.....	291
Number of girls completing third-year work.....	100

Number of girls completing fourth-year work.....	5
Total number of certificates to be awarded to girls.....	1,196
Number of State short-course scholarships awarded.....	3

HOME AND YARD IMPROVEMENT

Number of fences repaired	19
Number of trees planted.....	4
Number of shrubs planted.....	24
Number of outbuildings repaired or removed.....	9
Number of lawns planted.....	15
Number of planting of flowers.....	49
Number of demonstrations following plan of improvement for home	32
Number of new houses built.....	2
Number of houses remodeled.....	12
Number of lighting systems installed.....	27
Number of heating systems installed.....	131
Number of water systems improved.....	23
Number of kitchens improved by:.....	
Rearrangement	52
Screening	6
Improvement of floors.....	22

SUMMARY OF REPORT OF DISTRICT AGENTS AND SPECIALISTS

Number of meetings attended.....	243
Total estimated attendance.....	24,991
Number of visits to agents.....	180
Number of demonstrations given.....	133
Number of miles traveled.....	32,931
Number of exhibits judged.....	58

SUMMARY OF STATE HOME DEMONSTRATION AGENT'S ACTIVITIES

Number of counties organized.....	20
Number of county agents employed.....	23
Number of colored agents employed.....	1
Number of urban workers employed.....	1
Number of county agents employed full time.....	20
Number of miles traveled by State Agent.....	12,424
Number of meetings attended by State Agent.....	89
Approximate attendance.....	18,177
Number of official letters dictated.....	3,103
Number of demonstrations given by State Agent.....	19
Number of visits to county and urban agents.....	53

RESULTS OF SPECIAL QUESTIONNAIRE

Number of style shows held.....	11
Number of demonstrations in short cuts on sewing.....	135
Value of saving from clothing demonstrations and exhibits...	\$1,080
Number of milk campaigns held.....	11
Number of milk booths.....	23
Number of milk drinks sold.....	31,360

E. G. Jenkins, State Boys' Club Agent, has devoted two years to this work. He has been ably assisted by P. W. Chichester. The boys' Club work is making splendid progress, as is revealed in the report submitted by Mr. Jenkins. I cite the report practically in full:

"The outstanding fact in boys' club work in Maryland is that a State-wide organization of farmers' boys has developed and has become recognized by every important element in our commonwealth as an organization of boys rather than as an activity that boys may avail themselves of.

"It was organized boyhood, actively engaged in productive labor and in the first stages of ownership, to which the State Bankers awarded funds for inspirational activities. It was organized boyhood to which the Timonium State Fair officials offered opportunity to display their pure bred stock and to contest in dairy judging. It was organized boyhood which was recognized by the State Agricultural Society and others. It is organized boyhood which will more and more realize its opportunities and achieve big things in the program of improving farm practices and in making rural community life attractive and wholesome. The most important forward step in club work has been the development of this team work.

"Starting but two years ago in one or two counties, the pure bred pig club work among club members has found a steady and safe growth all over the State. How far this work is influencing improvement in selection of breeding stock is impossible to say, but the fact that scores of well selected sires have been bought by boys and the equally interesting fact that many fine individuals have been registered and sold by club members to adults, indicates the splendid start.

"In 1919 eighty club members purchased pure bred pigs in Harford county. This number was increased by 130 this year. About 140 pigs were displayed at the Harford County Fair last year by club members and all but one award in the swine contest were carried home by boys.

"Worcester county boys had a remarkable display of pure bred at their county fair also. In smaller numbers, but with excellent effect, exhibits of registered pigs were made in other counties and at many local fairs and shows.

"Eighty pigs were sent to Timonium from all parts of the State and the exhibit was an object lesson to hundreds of farmers, instructive

to thousands of urban visitors and received favorable comment in papers in this and other States.

"So far as reported by county agents, every note given to banks by boys for the purchase of pigs has been taken care of. This fall the first sizable effort to promote pure bred dairy calf club work was inaugurated. Impetus was given to this phase of club work when judging teams from 16 counties contested at the Timonium Fair.

"A number of boys have raised calves in this State each year, but recently 35 club members in Harford County, many of them aided by local banks, purchased Jersey and Guernsey pure breds costing all the way from \$125 to \$250 each.

"In many quarters boys are being led to give attention to crop rotation, cover crops and the like. A number of boys have had soil tests made and, following the advice of county agents, have enjoyed increased yields per acre.

"Several boys who had passed beyond the 18-year age limit report that they are now raising pure bred seed corn commercially. A direct result of successful club work. Improvement in selection of exhibits for community, county and State shows is everywhere remarked and there is not the least doubt that this is a direct outcome of club instruction. One of the most interesting cases is that of a club member who displayed a fine selection of potatoes. These potatoes were free from disease and gained such a local reputation that the best of the yield sold for seed at \$5.00 a bushel when potatoes were \$1.00 a bushel in the wholesale markets."

Through the hearty co-operation of Judge Frank I. Duncan, of Towson, Chairman of the Agricultural Committee of the State Bankers' Association, the banks of Baltimore placed a fund of \$2,000 at the disposal of the service for awards and inspirational club work. This made possible the holding of boys' and girls' club week at the University. One hundred and ninety-six boys and girls from all parts of the State were brought in by leaders. This week's instruction and inspiration was very helpful in aiding the members who attended and also served to give much enthusiasiam to the work.

Through the co-operation of the Timonium Fair officials, boys' clubs have taken an active part in the fair during the past two years. Eighty pure bred pigs were exhibited at the Fair by boys from all over the State. Sixteen judging teams of three boys each competed in the judging contest. The three best boys in the judging contest, viz., Joseph Hoopes and Charles Davis, of Bel Air, and Chauncey Ahalt, of Middletown, were finally selected to enter the National Dairy Show contest. Our team won fourth place and secured five prizes in competition with all the great dairy States.

The following is a summary of boys' club activities:

ENROLLMENT

1. Enrollment	1,702
---------------------	-------

VALUES

2. Total complete reports.....	765
3. Total value complete reports.....\$	45,873.79
4. Total estimated value uncompleted demonstrations.\$	120,551.10

AVERAGES

5. Average yield of corn per acre.....	76.65 bu.
6. Average cost of corn per bushel.....\$	0.41
7. Average yield of potatoes per acre.....	193.76 bu.
8. Average cost of potatoes per bushel.....\$	0.56
9. Average cost of fattening pig per pound.....	0.123
10. Average cost of growing pig per pound.....	0.169
11. Average cost of sow and litter per pound.....	0.03
12. Average cost of dairy calf per pound.....	0.26
13. Average cost of poultry per pound.....	0.14

SUMMARY OF AGENTS' ACTIVITIES

Number of miles traveled by Asst. Boys' Club Agent...	8,594
Number of miles traveled by Boys' Club Agent.....	11,576
Number of personal visits to schools or clubs for organization and instruction work by club agents.....	487
Number of meetings attended by State Agent.....	169
Approximate attendance.....	20,267
Number of meetings attended by Asst. Boys' Club Agents	78
Approximate attendance.....	2,210
Number of official letters dictated by State Boys' Club Agent	2,712
Number of demonstrations visited.....	125

The project in Agronomy is in charge of F. W. Oldenburg. His work is supplemented by specialists in the College of Agriculture and the Experiment Station, Prof. J. F. Metzger and Dr. A. G. McCall.

Mr. Oldenburg reports the following lines of work have been followed:

1. Cooperating with the county agents in regard to demonstrations in crops and soil fertility, including those in corn, wheat and other grains, grasses, soy beans and cow peas, vetches, alfalfa and other legumes.

2. Co-operating with the county agents and experiment station in demonstrations in lime and fertilizers and to bring about a more general use of lime.

3. Bringing about a more general growing of high yielding, pure bred wheat in Maryland.

4. Bringing about a more general growing of soy beans, especially the varieties best adapted to Maryland conditions.

5. Bringing about better methods of tillage and cultivation, and better crop rotations, to increase soil fertility and crop yields.
6. Giving addresses at meetings, community club meetings and picnics.
7. Judging farm products at community and county fairs.
8. Answering agronomy correspondence.
9. Chicago Grain and Hay Show.
10. Report on wheat contest.
11. Co-operating with the boys' club leaders in outlining projects and lessons.
12. Flax
13. Circulars.

Definite plans were submitted to all agents for demonstrations in the improvement of crop use of fertilizers and lime. The Specialist with the county agent visited 102 demonstrations. He has attended many meetings of farmers and made many individual examinations of farms.

A special lime campaign was conducted by Dr. A. G. McCall of the Experiment Station in co-operation with this department of the service. A lime day was set aside in which farmers were urged to take samples of their soil and send them to the Experiment Station for testing. Two thousand samples of soil were sent in for testing.

Special demonstrations have been continued in improving the yields of wheat in the State and the Agronomist and County Agents have made splendid progress in encouraging the growing of soy beans. In one county more than 1000 acres were devoted to this legume. This work was conducted in co-operation with the Station Agronomist, Mr. Metzger.

Mr Oldenburg managed the special wheat contest inaugurated by Mr. Edwin J. Baetjer.

The Specialist submits the following summary of his work.

Addresses at Farmers' Institutes.....	47
Number present at the Institutes.....	1,831
Addresses at Farmers' Clubs, Grange Meetings, etc.....	54
Number present at these meetings.....	3,702
Total number of addresses.....	101
Total number of persons present at addresses.....	5,533
Farms visited, demonstrations and prospective demonstrators	101
Other farms visited to plan crop rotations or give advice as to methods of promoting soil fertility.....	8
Miles traveled by railroad.....	9,192
Miles traveled by auto.....	3,243
Total miles traveled.....	12,435
County and community fairs judged.....	20
Other meetings attended.....	19
Letters written approximately.....	500

This project was conducted in cooperation with the Bureau of Animal Industry, U. S. Dept. of Agriculture. On account of reduced finances, the Bureau was compelled to call Dr. S. S. Buckley, who was in charge of the project, from the State on April 15, 1920, and place him in charge of some important work in the Bureau. This was a great loss to the service and the State, as Dr. Buckley was conducting an important piece of work. He was responsible for the splendid growth of the pure bred pig club work and the breeding of hogs generally, as well as the improvement of other live stock.

From the time of submitting the last annual report to the time of leaving, Dr. Buckley devoted his time to addressing 29 farmers' institutes and short courses at various points in the State. He inaugurated a campaign for cutting, meat curing and canning, and held many demonstrations in co-operation with the Home Economics Specialists. These demonstrations were well received and it is believed to be a fertile field for future work between the Animal Husbandry and Home Demonstration Departments of the Extension Service.

It was not possible for the Service to secure a Specialist to carry on this project until October 1, 1920, when Mr. G. H. Bedell was employed. Mr. Bedell submits the following results of two months work for the period covered by this report.

Number of miles traveled by rail.....	4,802
Number of miles traveled by auto.....	356
Number of people visited.....	15
Number of meetings attended.....	26
Attendance at meetings.....	696
Number of letters sent out.....	246

The lack of a market for wool in Maryland raised the question of some relief to be taken in assisting the sheep men to dispose of their wool. A plan was worked out by Mr. Bedell whereby the wool of the State could be manufactured into woollen blankets. Details of the plan were presented to the county agents, who then enlisted the interest of the county organizations. Special committees of farmers carried out the details and many thousand pounds of wool have thus been disposed of at a reasonable price.

T. E. McLaughlin, who served as District Agent and Specialist in Animal Industry, resigned July 1, 1920. While most of Mr. McLaughlin's time was devoted to supervisory work, he also did considerable work in general animal husbandry. Mr. McLaughlin resigned to take up the management of the Maryland-Virginia Dairymen's Association. The service regretted to lose him as a Specialist.

The control of hog cholera has proceeded along similar lines, as heretofore reported. The County Agents and Specialists have co-operated with Dr. I. K. Atherton and his associates, Dr. Cass, Dr. Cole

and Dr. McLaughlin, in aiding as far as possible in reducing losses to a minimum.

A summary of the cholera work, conducted in co-operation with our agents, is submitted by Dr. Atherton, Inspector in charge:

Number of meetings held.....	14
Number of attendance.....	827
Number of vaccination demonstrations held.....	38
Number attending demonstrations.....	841
Number of bulletins distributed.....	15,000
Number of farms visited by Specialists.....	2,913
Number of persons given special instructions.....	5,441
Number of outbreaks of hog cholera reported for year 1920....	614
Number of miles traveled by members of force.....	38,855

G. E. Wolcott has been in charge of this Extension project and he reports the following problems attacked during the year in cooperation with the county agents. First, to eliminate low producing and unprofitable cows from dairy herds; second, to lower the cost of milk production; third, to introduce pure bred sires into grade and "scrub" herds; fourth, to stimulate the consumption of milk and its products.

The first problem was attacked by organizing cow testing associations and by assisting farmers in the keeping of private herd records. The following cow testing associations were organized or reorganized: The Washington County Cow Testing Association; The Frederick County Cow Testing Association; The Talbot County Cow Testing Association; The First Harford County Cow Testing Association; The Second Harford County Cow Testing Association. By means of the cow testing associations dairymen are shown the profit-yielding herds. In the Frederick Association, for instance, the highest producing herd averaged 290 pounds of butter fat; the lowest producing herd averaged 714 pounds of butter fat for the year. Similar illustrations could be cited in the other associations. The second problem was attacked by instructing dairymen in the use of more economical feeds and in the individual feeding of the herd. Considerable progress has been made in the introduction of pure bred sires. Advice has been given in the purchase of a large number of animals. Several breeders' organizations have been formed in different parts of the State with a view of increasing interest in the respective breeds of cattle.

The Specialist submits the following summary:

Meetings addressed.....	52	
Number present.....	2,129	
Attendance at cow judging demonstrations at farmers' meetings.....	920	7 meetings
Attendance at cow judging demonstrations at club boys' meetings.....	368	12 meetings
Farm visits with agents.....	127	

MISCELLANEOUS DAIRY EXTENSION

In addition to Mr. Wolcott's work, Prof. J. A. Gamble, head of the Dairy Department of the Institution, has been able to supplement Dairy Extension work in the care, feeding and management of dairy cattle and especially in the manufacture and marketing of dairy products. Prof. Gamble reports that a central testing laboratory has been established for the collection and analyzing of milk from all sources coming into Baltimore. During the year over 48,000 samples of milk have been taken.

Within the State there are many receiving stations, creameries, etc., where milk and cream are put on a butter fat basis. It was found desirable to study the methods employed by the Babcock Testing Operators. By ruling of the State Board of Agriculture all operators were required to pass an examination. Over 90 operators have taken the examination and about 50 per cent were granted State licenses.

Prof. Gamble reports good progress in advanced registry work, as during the year ending Dec. 1, 1920, 481 cows have been tested monthly for register of merit work on 52 different farms.

Special work has been rendered in preparing and securing the enactment of a satisfactory bill for the manufacture of ice cream. The law provides that the fat contents of plain ice cream be increased from 4 to 8 per cent., or an increase of 100 per cent. In the case of other ice cream from 4 to 6 per cent., or an increase of 50 per cent. Prof. Gamble has addressed many meetings of dairymen and otherwise assisted in general Dairy Extension work.

S. B. Shaw, in charge of this project, reports the following lines of work undertaken during the past year in co-operation with the county agents: 1, commercial orchards; 2, home orchards; 3, home gardens; 4, handling of small fruits; 5, distribution of truck crops; 6, public demonstrations and field meetings; 7, community short courses.

An effort has been made by the Specialist to devote more time to the marketing of fruits than heretofore. Several commercial orchard demonstrations have been conducted by the specialist, giving instruction in pruning, general culture, use of fertilizers and in erecting home storage plants. The usual attention has been given to home orchards of various sizes. In all cases efforts have been made to induce small growers to give their home orchards attention so as to give a profitable return. In home garden work assistance has been given to Girls' Club work.

An effort was made by the Specialist to study the shipment and distribution of small fruit from the Eastern territory. The work was planned in co-operation with the U. S. Bureau of Markets. Valuable assistance was rendered the growers in securing a supply of apple barrels at reasonable cost.

As Secretary of the State Horticultural Society and in co-operation

with the Service and Bureau of Crop Estimates of the Department of Agriculture, monthly crop reports on the estimated production of apples and peaches have been distributed to the growers. Mr. Shaw is also continuing the project of securing a survey of all fruit trees in the State, with their respective ages. In one section the survey indicates that in ten years the production of apples will increase 200 per cent. The Specialist devoted much time to conducting public demonstrations, field meetings and community short courses. He submits the following summary of his activities:

Meetings addressed	22
Total attendance.....	1,852
Farmers' Institute meetings addressed.....	19
Total attendance.....	484
Meetings addressed at which film entitled "Apples and the County Agent" was shown.....	13
Total attendance.....	2,326
Community Short Courses.....	10
Total attendance.....	477
Pruning Demonstration Field Meetings other than Community Short Courses.....	19
Total attendance.....	255
Spraying demonstration field meetings.....	2
Total attendance.....	32
Visits to orchards other than at demonstrations.....	115
Conferences attended.....	32
Interview on Horticultural Work.....	162
Community Shows judged.....	12
Gardens inspected.....	14
Truckers visited.....	7
Miles traveled by rail.....	13,720
Miles traveled by automobile, boat and electric line.....	4,779
Letters dictated.....	1,935
Circular letters sent out.....	4,500

Prof. E. C. Auchter, head of the Department of Horticulture at the institution, has supplemented the Extension work of the Specialists. He, with Dr. Jones, of the Vegetable Department, has given much time to the tomato problem. A general survey on the cost of growing tomatoes carried on as an Experiment Station project, in co-operation with the county agents, has been made. A general survey of the sweet potato industry in Wicomico county was made last fall. Professor Auchter has visited several commercial orchards for the purpose of giving advice and addressing various farmers' meetings.

W. R. Ballard, in charge of the project on Vegetable and Landscape Gardening, reports an increasing demand for advice and demonstration work along these lines. Methods used in carrying on dem-

onstrations consisted in visiting school or home grounds with the county agents for the purpose of studying the characteristic features, taking measurements and making a preliminary sketch. A blue-print plan was furnished the demonstrator and the county agent. Accompanying this was a planting list and letter of instruction. Eleven county agents, representing nine counties, have been aided in landscape gardening demonstrations. In addition, several individual owners have been assisted in selecting sites for homes, laying out roads, locating garages, etc., and establishing and maintaining lawns.

Mr. Ballard did not commence work on this project until April 17, 1920. Other activities of the Specialist included judging at twelve community shows and the judging of 346 home gardens. The Specialist addressed eight public meetings and traveled more than 5,000 miles.

Dr. F. B. Bomberger, Assistant Director, is also in charge of the project on Rural Organization and Marketing. The administration work necessarily interferes with the vigorous prosecution of this project; nevertheless, with the co-operation of all the forces, a large amount of organization and marketing work has been accomplished during the year. Different phases of organization and marketing are carried on by all specialists and agents. In fact, the policy has been to induce all specialists and agents to direct their attention to marketing phases of the industry in which they are particularly interested.

In addition, Dr. Bomberger takes care of correspondence and details in connection with farm opportunities in the State. He reports the following:

"Every day letters come to headquarters from persons from widely separated points asking for information concerning agricultural possibilities of the State of Maryland. Every effort has been made to assist persons seeking to purchase farm land or homes in Maryland. Lists of farms offered for sale will be compiled. Special literature has been prepared to supply general information concerning the agricultural and other resources of the State. Correspondence and personal interviews with prospective settlers are solicited. The agents and specialists are requested to co-operate in assisting in locating desirable home-seekers.

"Locating Farm Managers, Tenants and Laborers—A roster of applications for farm managers, farm tenants and farm laborers will be maintained, and applicants for such positions will be put in touch with persons offering such opportunities."

The outstanding feature of the results accomplished under this project during 1920 has been a successful federation of local and community organizations into county-wide federations, councils, etc. At the end of 1919 only four county federations had been formed. At the end of 1920 there were sixteen counties in which county federations had been formed. To date practically all counties now have a county organization of farmers.

The county federations are becoming highly influential factors in the consideration and determination of matters relating to the rural welfare of the several counties of the State. These county federations are active in supporting Extension work, and at their regular meetings discuss the many problems, such as roads, schools, health, marketing and legislation relative to agriculture and the general welfare in the county. The county agents and home demonstration agents work in co-operation with these federations in outlining a program of demonstration work to be carried on in the respective counties.

Provision was made by the Maryland Agricultural Society to have the county federations affiliated with this well-known State association. Practically all of the counties are affiliated with the society and, in turn, the society is affiliated with the American Farm Bureau Federation. It has been the policy of the Extension Service to co-operate with the Agricultural Society, the Grange and with other farmers' organizations. Taking the situation as a whole, the status of rural organization in Maryland is fairly satisfactory. The plan of federation permits of co-operation among organizations of different types without causing the surrender of individuality of any unit. Much remains to be done in the way of formation and execution of definite program of work, but the groundwork is laid for a really effective and efficient organization of the rural people of the State.

Dr. Bomberger has attended several National Conferences on Marketing and, in co-operation with the Agricultural Society, he presented at the last meeting a marketing program to be carried on in the State. The policy has been to encourage co-operative marketing of farm products and the purchasing of farm supplies through county organizations. This has been very successful. During the past year approximately \$20,000,000 worth of business was conducted by our farmers through co-operative selling of farm products. There has also been a great demand for organizations for the co-operative purchase of farm supplies. Prior to the annual meeting of the Agricultural Society at Salisbury several farmers' organizations had purchased co-operatively, but since that meeting several county federations have taken the matter up and formed committees for this purpose. The volume of co-operative business as shown by the county agents' reports for 1920 was \$335,420. The policy of the services in this work has been to advise against hasty or ill-considered action; to begin in a small way on a safe and sane basis and to develop the organization as rapidly as there is demand for it, and no faster.

The Specialist with associates has been able to induce several groups of farmers to be more careful in the picking and handling of fruits and otherwise assisting in establishing better standards of farm products, which is fundamental to the success of co-operative marketing. The Specialist has published a bulletin, including a discussion of the fundamental principles involved in the marketing of farm products,

and also a report of miscellaneous investigations and studies made by P. F. Brookens and Dr. T. B. Thompson on behalf of the service. It is hoped that the present Legislature will provide the service with adequate funds in order to vigorously develop co-operative marketing in the State.

Dr. Bomberger submits the following summary of his work:

Meetings attended.....	152
Attendance at meetings.....	13,845
Average attendance.....	91
Addresses delivered.....	88
Visits of agents.....	67
Letters dictated.....	1,932
Number of miles traveled by auto.....	3,509
Number of miles traveled by train and boat.....	11,545
Number of miles traveled by specialist.....	15,054

H. W. Rickey, in charge of this project, reports a growing interest among the people in the development of the poultry industry. His work has been carried on by conducting practical demonstrations on the farm in some important phase of poultry culture, lectures and demonstrations at community clubs, granges and other meetings in the interest of agriculture, the publication and distribution of instructive material and the preparation of lessons for boys' and girls' club work. The Specialist, in co-operation with the Home Demonstration Department, conducted a large number of field demonstrations in culling the flock, killing, dry picking, the making of post-mortems and in the study of diseases. The Poultry Specialist killed and picked the fowls in view of those present, pointed out the effects of certain more or less common diseases on the internal organs. Fowls from the farm flock were handled and culled. Representatives of the Home Demonstration Department cooked and canned the dressed fowls and demonstrated the preservation of eggs in waterglass. Thirty-three demonstrations were conducted last winter in egg production. Weekly report from the demonstrators are submitted and the Specialist, with the county agent, visited the farms from two to four times during the period.

MISCELLANEOUS WORK

The Specialist has conducted demonstrations in 20 counties, visiting 231 poultry keepers for definite work. He has judged poultry at three community shows and assisted in the boys' and girls' club work. He has addressed a total of 74 meetings, with an average of 7,000 people in attendance.

The Specialist submits the following summary of his activities:

Farm demonstrations in winter egg production.....	32
Weekly reports of demonstrations examined.....	400

Demonstrations in winter egg production promised for 1920-1921	80
Farms visited in interest of demonstrations.....	150
Farms visited for other purposes.....	81
Total number of farmers' meetings, clubs, granges, etc.....	21
Total number of farmers' institutes addressed.....	18
Total number of addresses made.....	74
Total meetings of all kinds.....	85
Attendance at meetings.....	3,514
Total number of miles traveled by rail, boat or bus.....	9,565
Total number of miles by agents' automobiles.....	3,495
Total number of miles traveled.....	13,060
Total number of letters written.....	525
Total number of letters received.....	410

ENTOMOLOGY

This project is in charge of Prof. E. N. Cory, State Entomologist, with W. C. Travers as field assistant. Professor Cory reports that the principal problems attacked were concerned with the control of insects injuring fruits, truck and field crops and the development of the beekeeping industry. The demonstration work included the control of insects affecting apple, peach, pear, cherry, strawberries, potatoes, tomatoes, beans, peas and wheat. In most all demonstrations check plots were kept to be compared with the treated plots. In all cases the demonstration work was conducted in conjunction with the county agents. In all a total of fifteen commercial orchards, involving about 46,400 trees, have been employed in the commercial orchard work. A fuller report of the Entomologist will be given under the State Horticultural Department.

The Specialists report the following summary of activities:

SUMMARY OF WORK, W. C. TRAVERS

Miles traveled by rail.....	8,920
Miles traveled by boat.....	1,580
Miles traveled by hired auto.....	1,600
Miles traveled by own car.....	490
Miles traveled by bus.....	2,200
Miles traveled by car for which no charge was made.....	9,200
<hr/>	
Total.....	23,990
Orchard and farm visits made.....	1,440
Apple and peach demonstrations conducted.....	32
Strawberry demonstrations weevil control.....	37
Strawberry demonstrations beetle control.....	1
Strawberry weevil control experiments.....	2
Demonstrations in bean aphid control.....	5
Demonstrations in tomato aphid control.....	8
Demonstrations in cabbage plant aphid control.....	1
Addresses at farmers' meetings and community clubs.....	27
Demonstrations in pruning apple, peach and grape.....	12

SUMMARY OF WORK, E. N. CORY

Farm visits.....	152
Lectures	15
Miles traveled by train and trolley.....	2,317
Miles traveled by auto, including hired vehicles and county agents' autos.....	3,206
Fair exhibits arranged.....	3
Circular letters.....	18
Technical correspondence.....	3,704
Press articles.....	19

PLANT PATHOLOGY

Prof. C. E. Temple, who was in charge of this project, was transferred to College work September 1, 1920. Dr. R. A. Jehle was appointed to take up this work as his main project January 1, 1921. During three-fourths of the year Prof. Temple pursued projects previously outlined, in co-operation with the county agents, which included demonstrations in spraying and dusting of fruit trees for the control of disease. Five orchard demonstrations with about 1800 trees were conducted with definite results. The project in spraying tomatoes for control of blight, which has been carried on under rather extensive basis for three years, has been continued. Four potato spraying demonstrations have been conducted and inspections for certified seed in Allegany and Garrett Counties have been made. In addition work has been commenced in the certification of sweet potato seed stock.

A fuller report of the work of the State Pathologist will be given under the State Horticultural Department's report.

Professor Temple submits the following summary of his activities:

Number of addresses at farmers' institutes, clubs, etc.....	44
Total number of persons in attendance.....	2,640
Total number of visits to county agents, demonstrators and demonstrations	246
Special conferences attended.....	23
Total number of miles traveled.....	8,350
Letters written, estimates.....	1,400

An effort has been made to meet all the demands for such community meetings. In some counties as many as fourteen days have been devoted to the holding of institutes in different communities. In other counties only one or two meetings have been held, and in still others the work takes the place of short courses. All lecture and demonstration work has been supplied by special lists of this institution. The following is a summary of the work:

Total number of institutes.....	79
Total number of days.....	81
Total number of sessions.....	154
Total attendance, approximate.....	10,370
Total number lecturers.....	33

Under this heading may be cited the miscellaneous extension work that is conducted by various specialists connected with the Institution, who supplement the work of the various specialists on the Extension Staff. It is gratifying to have the able assistance of the College and Station men who generously respond to demands on their time. Prof. Zimmerman rendered valuable assistance this year in supervising the University exhibit at the Timonium Fair. This was a large piece of work, but with the co-operation of all forces a comprehensive exhibit with the following features was made under the auspices of the Extension Service:

1. Judging Contest in Dairy Cattle for boys between the ages of 12 and 18.
2. Special Dairy Exhibit.
3. Milk Exhibit and Demonstration of Milk Drinks.
4. Boys' Agricultural Club Pure Bred Pig Contest.
5. Educational Exhibit of Tuberculosis Control Work.
6. Hog Cholera Control.
7. Horticultural Exhibits.
8. Exhibit of Girls' Club Work.
9. Exhibit of Childrens' Diets and School Lunches.
10. Exhibit of Clothing.
11. Demonstration of Milk Dishes and the Food Value of the Same.
12. Farm Crops Exhibits.
13. Soil Fertilizing Exhibit.
14. Poultry Exhibit.
15. University of Maryland Information Booth.

It is very necessary that provisions be made by the coming Legislature to enable us to have an Exhibit Department. There is a tremendous demand from all the fairs and community meetings for exhibits from time to time. It is hoped that we can organize this work properly under a suitable leader.

F. A. Wirt, in charge of this project on Farm Machinery, resigned January 1st, 1920. On account of lack of finances a successor could not be appointed. Last fall, however, Mr. R. W. Carpenter was employed in co-operation with the College of Agriculture. He has devoted available time towards learning conditions in the State and arranging for demonstration work.

The general phase of Extension activity has been in charge of Prof. C. S. Richardson, who reports that the work has been carried on through four general divisions—lectures, correspondence courses, motion pictures and High School Public Discussion League. The policy of the department has been to satisfy all voluntary requests for service, but owing to limited finances no attempt has been made to advertise, or extend it beyond the point where our present facilities could not properly care for the work. A total of sixty lectures have been delivered, principally before the faculty and student bodies of high schools. In addition, Professor Richardson has delivered many addresses at picnics and other farmers' meetings. A total of 57 students are en-

rolled for correspondence courses. There is no limit to developing this phase of education if facilities permitted. The High School Public Discussion League was formed and a membership shows nineteen high schools of the State. This work is conducted in co-operation with the public school authorities.

Considerable work is attached to the circulation of motion pictures by this department. A number of county agents have secured projectors and are using the pictures constantly. The total of times pictures have been exhibited is 522 and the total number of people who have attended such exhibitions is 18,234.

I have thus tried to outline in a summary style the main projects of our extension work. A comprehensive survey of the work demonstrates the growing possibilities and appreciation by the people of the State of this system of instruction. The county agents, both men and women, are now considered as necessities in carrying forward a proper program of rural development. Many counties are requesting assistants to meet increasing demands. The service is lacking in sufficient assistance by specialists as well as in supervisory force. We hope that public funds will be forthcoming to adequately provide for the healthy growth of extension work in the State.

The general outlook in Maryland is most favorable. All agricultural forces are working harmoniously together for advancing the interests of all the people by a safe and regular development of the agricultural industry.

The writer is personally indebted to all members of the extension staff for the warmest co-operation in the prosecution of the work of the service.

The State Horticultural Department, operating under the Extension Service administration, was created by an Act of the Legislature of 1898 for the purpose of aiding the fruit growers and farmers of the State in the control of insect pests and plant diseases affecting all kinds of crops. The annual loss from injurious insects and plant diseases affecting our major crops amounts to thousands of dollars.

Every effort must be made to reduce this loss to a minimum. Only by effective organization, investigation, education, regulation and demonstration can the officers of the department keep pace in controlling new pests and constantly improve methods in controlling old ones. The department has rendered valuable assistance to the fruit growers and farmers of the State during the past years, in the control of the San Jose scale, brown rot affecting peaches, and many other pests whose control is gradually recognized.

The work of the past two years has been conducted as heretofore. Prof. E. N. Cory, State Entomologist, has directed the entomological work, while Prof. C. E. Temple, State Pathologist, has had charge of the pathological work. Beginning October 1, 1920, Professor Temple took on additional teaching work and Dr. R. A. Jehle was appointed as Extension Specialist to conduct demonstration work in Plant Path-

ology. Mr. W. C. Travers continues to serve as Nursery Inspector and in addition conducts considerable demonstration work.

The State Entomologist reports 54 nurseries inspected during 1920 for the presence of injurious insects and plant diseases. The principal nurseries were visited many times and practically all the stock going out was inspected at the time of shipment in addition to the field inspection. The rules regarding the fumigation of nursery stock were as strictly enforced as the limited force would permit. The nurseries, as a whole, were found to be in good shape and the nurserymen earnestly co-operating to prevent the distribution of injurious pests.

A total of 1,592 farm and orchard visits were made by the staff of the State Entomologist for the purpose of inspection and the making of recommendations relative to the control of pests. In many cases these visits and the work of the county agents lead to demonstration work which shows the fruit grower how remedies can be applied for the best results.

The Pathologists report visiting a large number of orchards for the purpose of inspection and demonstration.

In general, the orchard demonstration work is conducted in co-operation with the county agents and summaries are given in the Extension Service report.

The Entomologist reports that Mr. W. C. Travers conducted 15 commercial and 6 home orchard demonstrations last year. Six additional orchards served as demonstrations in pruning, cultivation, spraying, advice, etc. In all, a total of 36,400 apple trees and 17,525 peach trees were employed in insect control work. These orchards were, of course, generally distributed in the counties so that they would serve the greatest good. The spraying demonstrations involved treatments primarily to produce good clean fruit and to show fruit growers that with small expenditure of money by proper spraying the quality of the fruit can greatly be increased and profits accordingly much larger.

Other demonstration work in orchards include dusting with lime, Bordeaux and arsenate of lead on apples and peaches. The protection of cherry tree foliage by the application of insecticides and the control of the pear *Psylla*, with various remedies. In all, the orchard work has been very successful and helpful to the fruit growers of the State.

In closing the discussion on spraying, Professor Cory points out that the day when orchard-run apples brought nearly as much as first grades is no more. Quality is going to determine the margin of profit from now on.

Thirty-seven demonstrations on the control of the strawberry weevil were conducted in Worcester, Somerset, Wicomico, Dorchester and Anne Arundel counties. This pest has caused serious loss to our strawberry growers and it has been only during the past two years that methods of control have been developed by our forces which greatly reduces the injury to this crop. In Somerset County, where 17 demonstrations for the control of the weevil were conducted, there was

a difference in yield in one demonstration of 100 crates per acre on dusted plots and 25 crates per acre on the check plots. The results in other counties were good—the yields varying on account of late frosts, but in all cases dusting the beds to control the weevil gave satisfactory returns.

Five demonstrations of methods to control the bean aphid, 8 demonstrations on the control of the tomato aphid, 2 methods of demonstration to control the cabbage aphid, 1 demonstration respectively for the control of the pea aphid and insects and diseases of Irish potatoes were conducted in the 1920 season. The most interesting feature of this work was the use of a contact dust consisting of sulphur impregnated with nicotine sulphate applied with a new dusting machine.

Professor Cory, secretary-treasurer of the State Beekeepers' Association, has assisted in holding monthly meetings of the Association in Baltimore during the winter months and field meetings in the summer.

Owing to limited funds, very little has been done in the inspection of apiaries and control of diseases among bees. There is a wonderful opportunity to promote the beekeeping industry in the State and it is hoped that funds will be available to add a beekeeping specialist to our staff.

The outstanding feature of last year was the exceedingly large per cent. of injury from the curculio. Orchards which did not receive the pink spray—the treatment when the buds show pink—were hard hit by curculio and brown rot. Injury from late broods of the codling moth is coming to be a very serious factor in apple production. The peach tree borer is by far the most serious pest to peach growing. The department is now testing out very thoroughly the use of paradichlorabenzene, which promises a satisfactory remedy for the pest.

The most serious pests to truck crops are the various species of aphids. The black bean aphid, the turnip louse and the tomato and potato aphid appeared in various parts of the State and did considerable injury. One cabbage grower lost 70,000 out of 100,000 plants before he reported the trouble.

In forage and grain pests the Hessian fly increased materially the past year. The Army worm and the Fall Army worm appeared on the peninsula during the summer and early fall. Various other pests have occurred, but space prevents discussing them.

Maryland is free at the present time from a number of pests of the greatest importance, now present in adjacent States and in the other States more remote, but from which an infestation may be received at any time.

The chief one of these is the European Corn Borer, which is now present and doing serious damage to corn and minor damage to celery, beets, spinach, peppers and other truck crops in Massachusetts, Southern New Hampshire, Southern Maine, Central and Western New York, Northwestern Pennsylvania, Northern Ohio and Southern Michigan. A Federal quarantine and system of inspection and certification

of vegetables entering interstate commerce is the only safeguard against an invasion of Maryland by this pest. This Federal quarantine has been operating very efficiently to date, but it is only fair to assume that it can do no more to retard the ultimate spread of the pest.

The Japanese Beetle that is present in New Jersey and doing considerable damage to fruit and flowers may at any time become established in Maryland in spite of State and Federal quarantines.

The discovery of new outbreaks of the Gypsy Moth in New Jersey, New York and Pennsylvania last year is indicative of the possibility that it may be introduced into Maryland at any time.

In the south of Alabama is a new pest known as the Mexican Bean Beetle that potentially is the most serious pest of field and truck crops that we have ever faced.

We already have the Potato Wart disease in Western Maryland, the nematode disease of wheat generally over the State and a wide range of very serious plant diseases within our borders or just outside ready to enter at the favorable moment.

The imminence of all of these aforementioned pests means that the State Horticultural Department must be provided with sufficient funds to insure adequate protection to the farming interests of Maryland by thorough inspection of incoming nursery stock and plant products wherever they constitute a potential source of danger; by efficient scouting work to locate centers or the spread of infestations or infections and by demonstrations of methods of control or eradication, together with the utilization of every means for the dissemination of information in regard to pest control.

The State Pathologist, Prof. C. E. Temp'le, reports that the interest in the diseases of plants is growing. More specimens are being received for identification, more letters asking for control measures and more requests are being received for professional services in one way or another than formerly. As one example of this may be cited, requests for the inspection of eight cars of potatoes bought for seed, four cars were found to be diseased and unfit for seed, whereas the other cars were high-grade seed. We have had numerous requests for information concerning the efficiency of spray dusts. In 1920 co-operative uniform tests with dust sprays versus liquid sprays on peaches and apples were planned jointly with adjacent States. In Maryland these tests were made in four peach orchards and one apple orchard, and it was planned to duplicate the tests in 1921, but the scarcity of fruit made it impracticable. This work should be continued.

Inspection for certification of seed stocks has been given more attention during the past two years than ever before. In addition to the production of approximately 21,000 bushels of certified and high-grade Irish potato seed stock an attempt has been made to improve the quality of tomato seed and sweet potato seed stock. More than 1,000 pounds of wilt-resistant tomato seed were produced from inspected

fields in 1920. During the 1921 season a number of sweet potato fields were inspected for seed purposes and all but five were rejected. We have recently learned that the corn root-rot organism, which takes such a heavy toll in our State, is seed borne. In several kinds of crops we have records of doubled yields from better seeds alone. It is hoped, therefore, that funds will be made available for continuing and expanding this work for better seed stock in Maryland.

Nursery inspection and nursery stock control has been carried on as effectively as our funds would permit. The nurseries have been inspected each year and certain shipments of diseased nursery stock into the State have been intercepted. In one case of about 100,000 apple trees brought in, 20 per cent., or 20,000 trees, had unmistakable evidences of crown gall and were condemned.

A new potato disease, known as wart, has been found in twelve gardens in Maryland. It attacks the roots and the tubers of the potato, distorting and destroying them. In its worst phases the affected tubers become an irregularly shaped, brown, spongy mass unfit for food.

The first potato wart in this country was found in Pennsylvania in 1918. In 1919 other cases were found in that State and two cases were discovered in West Virginia. An extensive survey during that year in Maryland did not reveal any wart. In 1920 other cases were found in Pennsylvania and West Virginia and three cases were unearthed in Western Maryland. During August of 1921 wart was found in three other towns. This makes six towns in Maryland in which definite cases of potato wart have been found. All of these cases are in coal mining towns of Allegany County. These towns are Mt. Savage, Lord, Eckhart Mines, Detmold, Midland and Charlestown. Our search for wart has been extended into every county of the State, but in our search we have concentrated mainly on the mining sections, for it was in similar locations that the disease was found in Pennsylvania and West Virginia.

In all 3,706 potato inspections were made, of which 2,452 were in gardens; nine exhibits of wart material have been made at fairs; 32,200 cards, circulars and bulletins illustrated and descriptive of the wart disease have been distributed in the State and news articles have been furnished to more than 100 papers and periodicals.

In order to confine the disease to its present locations, every infected spot, together with some adjacent land surrounding it, has been placed under quarantine. No potatoes or other material, such as manure, that might carry the disease, may be removed from a quarantine area and only varieties of potatoes known to be immune to the wart may be planted in the quarantined areas. Since none of the quarantined areas ever produce enough potatoes to supply local consumption, and since our most popular varieties, such as cobbles, Green Mountain and McCormick, are known to be immune, the quarantine can never work a great hardship on any one. At any rate, the quarantine must be

enforced; the wart disease must not escape to other parts of the State. Judging from its spread in Europe and in recent years from Europe to this country, constant vigilance will be required to ferret out all other infections not yet discovered and to keep all known cases confined to limited quarters. In order to do this it will be necessary to detail a man to the task.

During the present emergency the Federal Horticultural Board has aided the State by the loan of an inspector to supervise the placing and enforcement of the quarantine. The Federal Horticultural Board is assisting us with the understanding that the State will provide funds for this work in the future.

Both the State Entomologist and State Pathologist report that present funds available for the work of the State Horticultural Department are wholly inadequate for the present requirements and do not permit of the extension of its activities along the many lines demanded by the farmers of the State. The appropriation to the department has not been increased since the department was created. It is obvious that to meet present-day conditions, additional funds are needed.

Owing to the presence of potato wart in the State and the possibility of other injurious pests getting established, the estimates submitted request an appropriation of \$30,000 for the work of this department during the next fiscal year. It is hoped that this request will be granted, as there is no work of the institution and State that is more important and that will bring greater returns upon the investment, both in protecting our State from invasion of new pests and in assisting our growers to control those pests that are exacting an annual toll.

We are all appreciative of the splendid support given the service by President Woods and the encouragement and assistance rendered by the officials of the State Relations Service, United States Department of Agriculture.

The Agricultural Experiment Station

*The President of the University,
College Park, Md.*

Sir: The Agricultural Experiment Station is the recognized center and source of agricultural information. Since the establishment of the Experiment Station by Act of Congress in 1887 a corps of workers have carried on investigations on the important problems which have confronted Maryland farmers and have obtained results which have helped many farmers to procure a greater profit from their labors and which have greatly advanced the agriculture of the State.

It has been the aim of the Station Staff to work in close co-operation with the farmers of the State and to deal with practical problems. The investigations conducted with soils, fertilizers, wheat, corn, hay, forage crops, tomatoes, cabbage, potatoes, tobacco, strawberries, apples, peaches, hogs, poultry and dairy cattle have yielded results that are returning to the farmers of Maryland many times the annual expense of the Station work, and the annual value of some of the work more than equals the entire cost of the Station since its establishment 32 years ago.

The Experiment Station invites a larger interest in its work on the part of all citizens and particularly the farmers. The Station is supported by State and national funds and its business is to serve the people and promote agriculture, the largest undeveloped natural resource of Maryland. The only limitation as to the service which the Station will be able to render is determined by the amount of funds available for its work. The citizens of the cities and towns of the State are concerned as to this agricultural development, as it directly influences their food supply. Maryland farms are fortunately located with reference to markets and the soils are particularly suited to the growing of products for human consumption. The ultimate development of Maryland agriculture will be largely toward the production of foods. Appropriations for investigations must be regarded as investments, not expenses, burdens or gifts.

What the Station Does for the Farmer

Soil Resources: The Experiment Station in co-operation with the United States Bureau of Soils and State Geologist has made a classification of all the soils in the State and surveyed the State so as to determine the distribution and area of each class. The survey of all of the counties has been completed except Garrett. The survey of

this county should be completed during 1922. On the completion of the soil survey the Station will be able to make an inventory of the soil resources of Maryland and make recommendations for the management of the different soil types based upon the results of the fertilizer and rotation tests in progress in different parts of the State. The Station has soil management and fertilizer investigations in progress in nine counties on the predominating soil type of each county. This work involves keeping the record of 769 separate plats. The results obtained in this work would justify its extension to reach every county and all the soil types. If the farmers of St. Mary's county would apply the information gained from the tests made on the principal soil type of that county it would increase the production in that county by 400,000 bushels of corn, 170,000 bushels of wheat, 1,600 tons of hay and 3,000,000 pounds of tobacco. An examination of Maryland farm lands would indicate that at least seven acres out of every ten are acid and should be limed in order to get the best yields.

The staple farm crops of Maryland—cereals, forage and tobacco—represent about 67 per cent. of the total annual crop value. It is evident that investigations with these crops will always command the major interest of the farmers.

Corn: Tests of corn have shown that the varieties best suited to Maryland are Johnson County White, Boone County White, Reid's Yellow Dent and Funk's Yellow Dent. Maryland grown seed of these varieties has given better yields than seed from other States. The highest yields of silage has been procured from Cock's Prolific and Eureka. They have given five to eight tons more silage per acre than other varieties.

Wheat: The Experiment Station has tested 160 varieties of wheat. The best five varieties on test now will yield over 20 per cent. more than the best five of 30 years ago. A survey of the wheat field of the State indicates that about 70 per cent. of the acreage is planted to the higher yielding varieties, which were introduced by the Experiment Station. On this basis the Station work has added about one and a half million bushels of wheat to the annual yield.

Soy Beans: The Station began growing soy beans in 1889. During this period many varieties have been tested, but so far only 15 have been found adapted to Maryland conditions. Of these the varieties known as Virginia and Wilson are outstanding for yield and dependability.

The Station has in progress experiments in crop rotation, green manure crops, rates of seeding crops, plant selections for yields and resistance to disease, plant breeding, hay, pasture and lawn mixtures, and top dressing and fertilizing tests, all of which promise very useful and valuable results.

Tobacco: The studies in fertilization and rotation for tobacco farms have given exceptionally marked and valuable results. The continued

work with the Maryland Mammoth tobacco, which was originated by the Experiment Station, has shown it to be one of the best varieties for Maryland conditions. It has given the highest yields and sold for the highest price of any raised in the State during the past three years.

Orchard Fruits: The importance of fruit growing in Maryland can be gained from the fact that there are over 3,000,000 fruit trees, and the annual sales represent about 10 per cent. of the total crop values. The Station has some very important investigations under way on orchard fertilization, cover crops for orchards, pollination of orchards, factors influencing biennial bearing and rejuvenation of orchards. The results of rejuvenating an old orchard show that the work when properly done will make an orchard over in one season and put it in shape to give profitable yields the next year.

Several promising early apples have been secured from the breeding work. The results in grape training indicate that the two-wire Kniffin system is best for Maryland conditions. The breeding work with grapes gives promise of a good colored grape, especially suited to Maryland.

Small Fruits: Work is in progress in testing varieties, culture methods and effect of fertilization on strawberries, raspberries, blackberries and some other bush fruits. The freeze the past spring destroyed this year's crop.

Market Garden Crops: The annual returns from market garden crops represents about 18 per cent. of the total value of all crops grown in Maryland or, in other words, about twice as much as the orchard fruits. Tomatoes, Irish potatoes, sweet potatoes, cabbage, sweet corn, spinach, cantaloupes and asparagus have been given a prominent place in the market garden investigations. Special attention has been given to the development of disease resistant strains, or varieties of these crops, but this investigational work has also included studies of cultural methods, fertilization, crop rotation, tests of varieties, etc. Considerable work is in progress on studying available substitutes for staple manure for fertilizing market garden crops. The disease resistant strains of tomatoes which were developed at this Station has been of great value to the canners of the State. This means much when it is remembered that Maryland packs about 45 per cent. of the output of the United States. Much progress has been made in developing disease resistant strains of cabbage and cantaloupes.

The fertility studies have shown that market garden crops respond favorably to application of lime and that many of the ideas as to this class of crops preferring acid soils are erroneous. The value of lime for sweet potatoes and spinach has been particularly marked. Results would also indicate that many of the soils used for market garden crops are especially deficient in available potash. The growing of seed for market garden crops has received attention particularly with

cabbage, cauliflower, cantaloupes, peas and sweet corn. Results would indicate that specially selected home-grown seed has enough merit to make this project worth while. Storage problems are being studied with onions, potatoes and fruits.

Floriculture: Much work is being done with flowers which should be of benefit to both commercial and pleasure growers. The following are a few of the problems receiving attention: Factors which influence the splitting of the calyx of carnations. The use of artificial (electric) light to give a longer day in winter has hastened the blooming of snapdragons and lupines. A study of the influence of the kind of bed, and under drainage on green-house chrysanthemums, and sweet peas, cultural and fertilizer studies in growing carnations and roses. Improvement of varieties by selection of stock and soil.

The Station has established in co-operation with the American Dahlia Society a test garden at College Park. The unusual weather conditions were very unfavorable for this work during the 1921 season.

Plant Physiology: Many of the problems connected with the growth of plants, the disease of crop insect attacks of crops and the factors influencing the ripening, storage and conservation of fruits, vegetables and grains are dependent upon the physiological and chemical conditions and changes. These are the factors which are receiving the attention of Station specialists in plant physiology. The results obtained in connection with seed potato investigations should greatly increase the average yield and be worth large sums to the growers of this crop. The investigations on sweet corn should help the canners to improve the quality of their product and make it more salable at better prices. This department is also making investigations of the nutrition requirements of the potato, spindling sprout disease of potato tubers, potato mosaics, factors influencing the maturity of potatoes, and factors influencing the hardiness of peaches.

Plant Diseases: The loss to farmers from crop and fruit diseases each year amounts to enormous sums, and methods for their prevention and control are important factors in this work. The following diseases have received the special attention of the plant pathologist during the past year: Fruit rots, corn root rot, fungi in corn ears, seed diseases, tomato blight and pear root rot. The breeding of disease resistant varieties and strains has received much attention, as this seems to be a profitable field for research as the results are easy for the farmers to put in practice, and they are complete and far-reaching. The wilt-resistant tomato strains developed by the Pathologist of the Maryland Experiment Station are now on the market and used in several States and are producing for agriculture annually many thousand times the original cost.

Insect Control: The importance of protecting crops, fruits and animals against insect ravages is impressed upon farmers every year.

The farmers who practice the control methods advised by the Entomologist saves thousands of dollars in crops, and the farmers who fail to spray lose much. The Station entomologists are working on the following problems: Control of Peach Tree Borer, control of the Boxwood Leaf Miner, control of the Chrysanthemum Gall Midget; control of Mealy Bug, Red Spider, Thrips, Aphids and Scales in the Green House. Comparative Value of Sulphur Compounds, Nicotine Preparations, Creosote Compounds, Pyrethrum Preparation, spreaders and adhesive insecticides, repelling stable flies, winter protection of bees. The results with the use of paradichlorobenzene for the killing and control of the peach tree borer would seem to indicate that a practical solution of this vexing question had been secured.

Only a very small amount of money has been available for investigating animal industry problems. Some of the projects in this field have become dormant on account of changes in the Station staff. There is opportunity to do much to benefit and develop the live stock husbandry in Maryland as soon as funds are provided.

Poultry Investigations: The following matters have received the attention of the Poultry Department: A study of the factors influencing egg hatching; a study of the sources and remedies of gape worms; the development of poultry methods and appliances; test of the suitability of limestone grit as a substitute for oyster shell and granite grit; feed rations and problems; poultry culling and its relation to profit and elimination of diseases. Much better facilities and more for maintenance expenses should be provided for the work in the interest of this important industry.

Hog Industry: The investigation with hogs has been confined the past year to questions which would give a better knowledge of methods for the control of hog cholera. A survey of hog-raising in Maryland would indicate that cholera is the principal drawback to its profits and development. A preliminary report upon these investigations will probably be issued next year, but it will require at least three more years to complete the work outlined.

Biological Laboratory: In addition to the research work with hog cholera this laboratory has also made a careful study of gout in geese, and done much on black leg in cattle and testing an ozoning machine as an auxiliary in ventilation. This laboratory has distributed during the year about 600,000 c. c. of anti-hog cholera serum to the farmers of the State and prepared and distributed 1,422 tubes of culture for inoculating legumes, and about 32,000 c. c. tuberculin. This laboratory has diagnosed trouble with about 400 animals representing 10 different species.

Dairy Farming: This is one of the most important industries in Maryland, and many of the problems pressing for solution should be receiving the attention of the Station. The lack of funds has necessitated cutting down this phase of the work; some important projects are dormant, and nothing is available for new projects. A study of

the cost of producing milk with cows kept and fed under varying conditions is being made; also of the protein requirement of growing heifers. Some breeding problems are also in progress.

Publications

The Station's appropriation for printing is not sufficient to provide for publishing the results of investigations promptly.

There is also need of having money available for reprinting some bulletins, the original editions of which have been exhausted. The bulletins are sent free to all farmers in Maryland who request them. There are about twenty thousand names on the Station's general mailing list. The Station also has special mailing lists, so as to be able to send information to farmers interested in special crops. The Station issues from six to ten bulletins each year.

The following bulletins were issued during the fiscal year 1920-21:

	No.	Subject	Author	No pages
July	237	Variety tests of Corn, Wheat and Soy Beans	J. E. Metzger	24
July	238	Seed Inspection in 1919.....	F. S. Holmes	30
Oct.	239	The Relation of Green-Houses Pests to the Transmission of Geranium Leaf Blight	P. Garman	26
Nov.	240	Internal Fungus Parasites of Agricultural Seeds.....	C. C. Chen	30
Dec.	241	Annotated List of Halticini.....	A. B. Duckett	45
1921				
Jan.	242	A Comparison of Different Forms of Lime	A. G. McCall	10
April	243	Seed Inspection in 1920.....	F. S. Holmes	20
June		Thirty-Third Annual Report.		

These bulletins made a volume of 186 pages for the year. The Station staff have contributed numerous articles of a popular nature to the agricultural papers, and many technical papers to scientific meetings and journals.

The Station Staff

The research staff of the Station is made up of 25 persons. Six of these devote their whole time to investigational work, and others give some time to duties in the College of Agriculture.

The changes in the Station staff during the past two years has been confined to the assistant positions. The changes have not necessitated much change in policy or character of work. There are some projects which are dormant, as positions vacated during the World War have not been filled, as it has been found best to use the funds thus re-

leased to provide properly for the other work. R. S. Allen resigned to accept a position in the United States Department of Agriculture. G. R. Stuntz, Assistant Agronomist, transferred to County Agent Work in the Extension Service, and R. Lee Sellman, graduate of the University of Maryland Class of 1919, was appointed to fill this vacancy. J. R. Haig resigned to accept a position at Pennsylvania State College. R. C. Towles resigned to engage in commercial work with the Virginia-Carolina Chemical Company. E. V. Miller resigned to take up missionary work in China. J. P. Jones resigned to accept a teaching fellowship at Cornell University. S. V. Eaton resigned to take up post-graduate work at Chicago University. W. R. Ballard transferred to the Extension Service.

The decrease in the purchasing power of appropriations has made it necessary to allow many investigations to become dormant and also made it impossible, except in a few instances, to meet the demands for new investigations. This condition has been unsatisfactory for both Station workers and farmers.

Respectfully,

H. J. PATTERSON, *Director*.

The College of Agriculture

*The President of the University,
College Park, Md.*

Sir: The College of Agriculture has for its aims: (1) To teach a practical system of farming for those who wish to farm; (2) to train young men and women to carry on scientific investigation pertaining to agriculture, and (3) to prepare teachers of agriculture for high schools, normal schools, colleges and universities.

To accomplish the above aims the College of Agriculture is organized to include the following departments: (1) Agonomy (including Forage Crops, Grain Crops, Genetics); (2) Agricultural Education (see College of Education); (3) Animal Husbandry; (4) Animal Pathology and Veterinary Medicine; (5) Bacteriology and Sanitation; (6) Dairy Husbandry; (7) Entomology and Bee Culture; (8) Farm Equipment; (9) Farm Management; (10) Forestry; (11) Horticulture (including Pomology, Vegetable Gardening, Landscape Gardening and Floriculture); (12) Plant Pathology; (13) Plant Physiology and Bio-chemistry; (14) Poultry Husbandry; (15) Soils.

Curricula for special study are offered by all departments excepting Forestry and Poultry Husbandry. The courses offered in these two departments so far has been to supplement work of other departments. Forestry, perhaps, should not be given as a major subject, but certainly no agricultural college is complete without substantial equipment and a good teaching force in Poultry Husbandry. It is hoped that we will not need to go over another year without sufficient instruction in Poultry.

A short practical agricultural course extending over two years of time is offered for students of sub-collegiate grade. The curriculum includes general courses in all phases of agriculture and, in addition, permits students to take special work along the lines in which they are particularly interested.

A large number of requests come each year for short winter courses in agriculture for practical farmers, such as were conducted previous to 1917 under the direction of Professor W. T. L. Taliaferro. The work was discontinued because there are no facilities at College Park for housing the attendants. When proper facilities are furnished the plan is to continue the much needed service for those who can leave their farms only a few weeks in the winter.

The Veterans' Bureau for the 10 per cent. incapacitated ex-soldiers has sent about 75 students to us for rehabilitation purposes. The young men plan to buy farms and become practical farmers after two or four years of college training. The University welcomes these

honored men and gives them its best services. The Federal Board for Vocational Education has given substantial financial support from time to time for the purpose of buying additional equipment or employing additional teaching force. At the present time the board is supplying us with funds to pay for specialists in Horticulture, Poultry Husbandry, and Bee Culture.

The number of students enrolled for agricultural work does not show an increase this year. This condition is doubtless due to the temporary depression throughout the country in everything that pertains to agriculture. As soon as conditions become normal the demand for such training will no doubt again become keen.

During the past year questionnaires were sent to all students who had been in attendance during the past ten years. All alumni were given an opportunity to say how much money they are making, how they have been helped by training received at the University, or how they have been handicapped by not receiving certain training that an agricultural college should provide. In general the answers show that alumni are satisfied with their achievements since leaving college and their accomplishments are encouraging to college officials. Some of the more frequent suggestions for additional study in College of Agriculture are as follows:

"Provide orchards where students can get actual practice in commercial and home orcharding."

"No student should be graduated without a through training in all kinds of agricultural machinery." (This branch of the college is now fairly well taken care of and will be complete when a building for the sole purpose is provided).

"Dairy herds, barns and equipment for use by students are essential to training of students interested in dairying."

"The college does not have enough live stock."

"Agricultural economics is essential to a complete course in agriculture."

"You should give more attention to poultry."

Some of the deficiencies mentioned have been corrected and the others will be as soon as sufficient funds are available for purchase of land and equipment.

Respectfully submitted,

P. W. ZIMMERMAN, *Dean*

The College of Arts and Sciences

The President of the University,...
College Park, Md.

Sir: I submit herewith my report on the College of Arts and Sciences.

The College of Arts and Sciences of the University of Maryland has been organized by grouping, for administrative purposes, of all the languages, mathematics, history, political and general science and other general subjects to meet the required standards of an Arts and Science College. The college, besides furnishing supplemental teaching for the other colleges and schools, is giving foundational education in its major subjects. The college is an outgrowth of the School of Liberal Arts of the old Maryland State College.

The admission of students is in charge of the University Committee on Student Enrollment and Entrance, which determines the credits that shall be issued on all entrance examinations and certificates.

The College confers the degrees Bachelor of Arts and Bachelor of Science. In order to be recommended for the degree of Bachelor of Arts or Bachelor of Science, the candidate must first have satisfied the requirements for admission; and, second, must have obtained a prescribed minimum number of college credits.

Following the custom maintained in State Universities, we have endeavored to make uniform, as far as possible, the curricula of the Freshmen and Sophomore years for all courses in this college and have found in so doing that good results have been attained and simplicity in administration has been promoted to a marked degree.

The function of this college is to provide a liberal foundation in basic subjects, both literary and scientific, upon which the student may build a training that will respond to his needs, whatsoever field of work he may choose. Moreover, every other college on the campus derives from this one instruction in the pure sciences, so-called, and in the cultural arts.

The Pre-Medical Curriculum has been outlined to meet the demands of the American Medical Association and is more than adequate to this end. The work in the Pre-Medical curriculum has been outlined in co-operation with representatives of the Medical School in Baltimore.

The faculty of this college is now at work formulating a Pre-Law Course. It also is affording instruction for classes in Baltimore in the Schools of Dentistry and Pharmacy in Arts subjects. These courses are maintained on the same standard as those at College Park.

In response to a persistent demand, the work in Commerce and Business Administration originally organized as a department of this College, has been organized to be a School of Commerce and Business Administration. Courses in Economics, Sociology, Psychology, Markets and Marketing, Money and Banking, and Co-operation Finance are being given by Dr. Thompson; those in Business Organization, Business Management, and Purchasing and Selling are being given by Mr. Harrison; those in Business Law, Commercial Geography, and Economic History of the United States and Europe, by Mr. New; those in Social Psychology, by Mr. Collier; those in European Diplomacy, by Mr. Putney, and those in Accounting, by Mr. Juchoff.

The work of the College of Arts and Sciences has been received with unusual enthusiasm, as is shown by the demand for the work it offers. Nearly two hundred students are now enrolled for degrees, and the college has been in operation only a little more than a year. Undoubtedly this enrollment should increase as adequate facilities in personnel and equipment are forthcoming.

This college is working under stress, due mainly to lack of space. We have no executive offices, and consequently have difficulty in caring for our records. The classrooms are inadequate both in number and in capacity, and our teaching force is insufficient. Only by exceptional willingness to carry heavy loads and enthusiasm of my staff have we been able to maintain standard instruction. We must have our teaching force increased; otherwise we cannot expand in our field of usefulness. At the session of the Association of Colleges and Preparatory Schools of the Middle States and Maryland held November 25, 1921, the College of Arts and Sciences of the University of Maryland was rated as standard in every particular. It is imperative that this rating be retained. We are confronted, therefore, with the dilemma of increasing our equipment and personnel or restricting our enrollment. We are especially inadequate in the matter of laboratory room and equipment. The increased cost of laboratory equipment and the demands for various phases of research education make this particularly distressing. We have reached the limit of our capacity unless help be forthcoming.

I have filed a tabulated statement setting forth the financial income of this College as per the present budget, with recommendation for increase to meet urgent demands. This appears in your general financial report.

Especially do I want to ask you to consider the shortcomings of our library facilities, equipment and content. Our library has not been nourished to keep pace with the growing body of our University, and it has been only by grace of our accessibility to other libraries that we have been enabled to get along as well as we have. This College is built upon the university library and we must anticipate liberal support in this respect to hold up our standards.

The spirit permeating the faculty and the student body of the College of Arts and Sciences is admirable. The salaries of the faculty members are wholly inadequate. Our students are earnest and patient, and they evince a desire to co-operate in every movement that makes for the betterment of academic and campus life.

Respectfully submitted,

THOMAS H. SPENCE, *Acting Dean.*

School of Dentistry

*The President of the University,
College Park, Md.*

Sir: The School of Dentistry found itself facing new and varied conditions at the beginning of the present biennium. One outstanding change called for by the adoption of a rule promulgated by the Dental Educational Council of America, which stipulated that a minimum of four full-time teachers and at least three half-time teachers should form the nucleus of a staff for instruction in acceptable dental schools of the country. Prior to this the school had for some years carried only one full-time man on its list.

Another feature which came in with the beginning of the biennium was the extension called for under a change from a three-year course in dentistry to one of four years. The session of 1920-1921 brought to us the first graduating class of the four-year course. The work of the three elower classes needed revision and amplification, while the fourth year work was made largely one of general clinical experience.

Due to radical changes made by the School of Medicine, which called for the removal of equipment for the Department of Bacteriology from the Dental Building to the College of Physicians and Surgeons, the School of Dentistry was obliged to expend a considerable sum of money for the installation of new laboratory equipment in order to carry on the course in this particular branch.

Flooring in the halls and infirmary were renewed, and that portion of the building occupied by the School of Dentistry was given an interior coat of paint, new plumbing installed and a sterilizer for use in the general clinic was purchased.

In addition to the above cited improvements, through the donation of Dr. Horace M. Davis, a small amphitheater addition to the extracting room clinic was built, and much new and improved equipment installed. The total cost of this improvement amounted to \$1,750.00.

The session of 1921-1922 finds our department crowded, an uneven condition existing in the number of students in the fourth and first years. In the former only 29 students are enrolled, while in the latter there are 81 students enrolled. At least 30 applicants were denied admission to the freshman class due to lack of facilities to properly take care of them.

The clinical work of the school is an important part of the curriculum and is departmentized as follows:

- (1) Operative Dentistry, which embraces the filling of carious cavi-

ties in teeth, the treatment of pyorrhea, general prophylactic work, the adjustment of various types of crowns and bridges as substitutes for lost masticatory organs, and the treatment of abscess conditions about the roots of teeth, etc.

(2) Practical Prosthetic Dentistry, which includes the construction of removable substitute dentures on various bases, such as vulcanite, gold, etc.

(3) Exodontia. The extraction of normal and impacted teeth under proper conditions and the after-treatment called for.

(4) X-Ray, which provides a means of study of underlying bone tissue, and an aid to a proper diagnosis of conditions.

All departments of the clinic are headed by competent and experienced instructors, the work in each clinic being done by the students.

At least 25,000 patients visit the clinic during each year. No charge is made for service rendered by the student. Those able to pay for cost of material used in the work are asked to meet such expense. About 15 per cent. of the work done is actual charity, the school meeting the cost of materials. Public health nurses are pleading for the privilege of bringing children under their charge to the clinic in greatly increased numbers. Under present conditions it is impossible to meet their demands. Important as this service is to the present and future health and comfort of the children, the experience to be gained by the students is limited, and it does not provide a varied technique, so essential in the development of a well-rounded operator.

The instruction during the past year, and thus far in the present session, has been creditably good, considering the hampered conditions of our housing facilities and equipment. The Dental Building, while not old, was erected with no thought for the special needs of the school. The instruction at that period, 1904, was mainly didactic, while at the present time laboratory, technic and clinical courses predominate. The latter policy demands more working space and an increased number of teachers. In some cases one teacher is required for each 20 students, and in others one teacher to each 30 students, and in another one teacher to each 40 students. These conditions are maintained by rule of the national governing body in dental educational work. Competent and experienced instructors in these specialized subjects are required, if the standard of instruction is to be what the future demands. For the purpose of holding the men now being trained in this work an appropriation should be made which will provide adequate compensation for full-time teachers on these subjects.

The University of Maryland School of Dentistry is a pioneer in placing Prosthetic Dentistry on a scientific basis. Much progress in this direction has already been made, and the clinic in this branch has greatly outgrown the facilities. The need for room and equipment expansion in this clinic are urgently demanded if the possibilities for service in this clinic are to be advanced to their fullest extent. An adjoining small lecture room could be converted into a clinic room for

this purpose. The equipment necessary for this expansion would prove rather costly, but is amply justified when viewed from the standpoint of public service and student advantage.

A second needed improvement is one in the Operative Dentistry Clinic. At the present time each student is required to provide himself with the old-time foot engine, an obsolete article in an up-to-date dental office. Aside from the monetary outlay to which the student is put for an article which he will be obliged to discard at the time of graduation, the space occupied by property owned by the students of the two upper classes, usually numbering about 100, could be used to better advantage for other purposes. In order that elimination of these foot engines may be effected, electric engines should be installed and a yearly rental charged against each student for use of them.

Additional space is urgently needed if development and normal growth is expected. Ample space and equipment should be provided at the earliest period for the accommodation of at least 60 students in each of the four classes.

Very truly,

T. O. HEATWOLE, *Dean.*

College of Engineering

*The President of the University,
College Park, Md.*

Sir: Colleges of Engineering exist because of the need of all communities for men trained as engineers. The Engineering College of the University of Maryland exists to meet the demand of the youth of Maryland for such training. How insistent is this demand is evidenced by the enrollment in 1921 of nearly double the number of engineering students registered in 1920.

It is idle to argue as to the relative value of an agricultural, a general arts, a medical, an engineering, or any other special curriculum of study. All are essential to the progress of a community, all should be liberally supported.

The time is here when the public is to call upon the engineer to occupy far larger fields of influence in the direction of public and quasi-public affairs. In an ever-increasing degree do the people living in the country, as well as those of the cities, depend upon the collective efforts of others for daily necessities and conveniences. That these shall not fail, that adequate services are rendered for a reasonable reward, that sufficient organizations exist to carry on such enterprises, that the most from our natural resources is rendered to all people, are constructive problems that call for men trained to constructive thinking. And engineering is pre-eminently the constructive profession. It is not difficult, therefore, to comprehend how great are the opportunities and the responsibilities that are to come to our engineers.

The engineering college must inspire its students to realize the possibilities that lie before the well-trained engineer in such service. Therefore, it seems especially to be the function and duty of the State University to supply the demands of young men of the State who seek to become engineers.

The Engineering College of the University places particular emphasis on the relation of the engineering student to the public service. This is brought out in the statement under the heading "College of Engineering" in the University catalogue for 1921-1922. "The general purpose," it is stated, "is to broaden the courses of instruction the better to prepare young men to enter the public service. The large public works program contemplated in practically every State in the Union makes urgent the demand for engineers trained for such work. The public service demands the electrical and mechanical as well as

the civil engineer. Maryland needs such men to carry on her great highway work and large public undertakings contemplated in various cities and counties. Such training seems pre-eminently a function of the State's University.

"It is not the intention that the subject matter of the courses shall be essentially different from that usually given, but that the viewpoint of the student and the application of the principles will be that of public service. In order to give the time necessary both to the technical subjects and to those of a more general character, a careful revision of all courses of study is being made so that the utmost time available in each term may be used to the best advantage." From the above may be gathered a suggestion of the policy, the hopes, and the aspirations which actuate the upbuilding of the College of Engineering of the University of Maryland.

It will not be amiss here to point out briefly some of the work that is under way, as well as the important needs of the College. There are now offered courses in three branches of engineering—civil, mechanical and electrical—each of which requires four years of study for completion. As mentioned above, the courses of study are undergoing revision, much of which has been accomplished. The catalogue for 1920-1921 contains the outline of the revised courses upon which the present freshmen and sophomore classes are already engaged. The prescribed courses of study call for the same work for the first two years in all three branches of engineering now offered. Thus a student need not decide definitely which course he desires to pursue until the beginning of his junior year. This change, it is believed, is in accord with the best opinion on the subject today.

It has also been the endeavor so to arrange the work of all on the staff of instructors so that the students in their freshman year shall come into direct contact with the heads of departments as well as with the other members of the teaching force. Already much in this direction has been accomplished, and much more is possible.

The present enrollment of engineering students taxes to the utmost the present corps of instructors. Also there is every indication of a largely increased demand for admission to the engineering courses. But many must be disappointed unless a larger equipment is provided; first, a greater number of instructors; second, more apparatus and buildings. As it is, many Maryland boys are obliged to go outside their own State to secure educational facilities not open to them at their own State University. This is not as it should be.

An Engineering Experiment Station where research work may be carried on is an important part of an engineering school, and of particular value to the State at large. At present, through a co-operative arrangement with the Bureau of Public Roads of the United States Department of Agriculture, and the State Roads Commission, a beginning has been made in the field of engineering research. The problems in hand are connected with highways. A traffic study of Mary-

land has been carried to completion and a bulletin shortly is to be issued. The principal feature of this study has been the compilation of a traffic map of the State, which is the first map of its kind to be published in the United States, based on a traffic census continued over a period of years. For the first time it will be possible to see at a glance the use that is made of the highways of the Maryland State Road system, generally recognized as one of the best in the country, and plan knowingly for its future growth.

A second study, well under way, is the examination of the concrete roads of the State. A suitable drilling apparatus mounted upon a truck was busy this past summer cutting samples from the concrete roads. The cores thus cut were sent to the laboratory at the University to be tested by a specially devised apparatus to determine their strength and other physical properties. The object of this study is to learn what effect traffic may have upon the roads; to determine what is the proper thickness; what, if any, evidences of weaknesses there are and their causes. As with most research problems, it is quite likely that the greatest value from the results of this study of the concrete roads of Maryland may not be developed until the work is done.

Closely connected with the examination of the samples taken from the concrete roads is an investigation of the fatigue or enduring properties of concrete under load or stress. Good progress has been made on this project, for which a special testing machine was designed and made at the laboratory of the College.

Much more might be said of the policy and work of the Engineering College, but the above it is hoped will suffice to show the large opportunities that lie ahead and the need of the State to develop them. But if the Engineering College is to fulfill what is so clearly its function it must receive from the people of the State, through their Legislature, greater support.

Very truly,

A. N. JOHNSON, *Dean.*

College of Home Economics

*The President of the University,
College Park, Md.*

Sir: The Division of Home Economics was established October, 1918, and was reorganized into the School of Home Economics in 1919, and again reorganized in 1921 into the College of Home Economics, as it now stands.

The Department of Textiles and Clothing was the first in the College of Home Economics to be organized and equipped—in the fall of 1918. At that time two courses with an enrollment of five students were given. From 1919-1921, in order to meet the increasing demand, this department added to its curriculum the following: Advanced Courses in Textiles and Clothing; courses in Art, including Composition and Design; Freehand Perspective, Costume Designing and Interior Decoration. The class in Interior Decoration is at the present time furnishing and decorating the living room in one of the houses for girls as a class problem.

In the spring this department will fill orders for children's clothing, solicited from the surrounding neighborhood, as part of their work.

Up to the present time the courses in this department have been planned to meet the demands of two classes of students: (1) Those who wanted a knowledge of textiles and clothing as part of their general education. (2) Those who desired to teach such work.

Now comes the demand from the commercial world for people with a knowledge of textiles and clothing to become textile testers, clothing buyers, directors of clothing shops and dressmaking establishments. Courses are now being planned to meet these demands, and within the next two years students will be prepared for this sort of work.

The Department of Foods and Cookery had not offered any courses until the Summer School of 1919, when two courses were given with eight students enrolled. The laboratory was old and inadequate, the equipment having been left over from previous summer schools.

The courses in this department have been designed to give instruction in the preparation and service of meals for a family or larger groups, and in the selection and buying, as well as the dietetic value of foods. It was with these aims in view that in the fall of 1919 Elementary Foods was offered as a part of the regular curriculum, and that within the last two years courses in Advanced Foods, Nutrition, Preservation and Demonstration of Foods and Experimental

Cookery have been added. As the Department in Institutional Management demands it, courses in large quantity cooking will be further added to the curriculum.

Up to the present time the Department of Hygiene and Health has offered only one course, namely: Personal Hygiene. Within the next two years courses are being planned to give instruction in the health and the general well-being of the individual, the family and the community. A course in Child Care and Welfare will be offered in 1922-1923.

The purpose of the Department of Institutional and Home Management has been two-fold. First the management of the University dining hall, the laundry and other parts of the institution that could be placed to advantage under such a department. Second, the training of home economics students as directors of cafeterias, lunchrooms, institutional dining rooms, etc. To meet the increasing demand for trained women in these lines it is necessary for the College of Home Economics to maintain such a department

Although this department has had the management of the dining hall and laundry for the past two years, it has just begun the training of home economics students as institutional directors, and has this year offered a Survey Course in institutional management. The practice work of such a course, which should be carried on in a fairly well-equipped dining hall, or cafeteria, is almost impossible until a new one is built, as the present dining hall and laundry, accommodating some four hundred and fifty people, are housed in frame buildings, both inadequate as buildings and in facilities

Under this department a temporary practice suite was furnished and equipped in the girls' dormitory, where the first home economics students kept house for a period of six weeks in the spring of 1920. This work has now been transferred from its temporary location to the new Home Management House, opened this fall, with accommodations for sixteen people, where the facilities are more adequate than in the other house. In this housekeeping practice work each student is taught and practices every duty of the home maker, and is required to assume entire responsibilities for the house for a certain length of time.

Within the next two years it will be necessary to have a full-time Dean of Home Economics and larger personnel for the departments. Up to the present time the head of the Department of Institutional and Home Management has been Acting Dean of Home Economics and head of the Department of Foods and Cookery.

The Department of Textiles and Clothing anticipates within the next two years opening and maintaining a dressmaking shop, supplying orders from outside people, in order to train students in this line of work. To equip properly this will mean an expenditure of several hundred dollars, although such a shop, after it is running, will more than be self-supporting.

The old equipment in the Foods and Cookery Laboratory has been rearranged in such a manner as to give service for another two years, and with the addition of some small equipment for the laboratory and of furniture and furnishings for a small adjoining room, which is badly needed to serve as a model dining room, in which to teach meal service, this department will be complete for the present.

The great need for a dining hall and laundry has been stressed in other sections of the Biennial Report.

M. MARIE MOUNT, *Acting Dean.*

The College of Education

*The President of the University,
College Park, Md.*

Dear Sir: The College of Education as now constituted consists of an organization of the various activities of the University which are concerned with the professional preparation of teachers. Its courses are planned to serve three classes of students—(1) those preparing to teach agriculture, home economics, industrial and general subjects in secondary schools; (2) prospective principals of high schools, educational supervisors, county agents, home demonstrators, boys' and girls' club workers, and other extension workers; (3) those majoring in other lines of work who desire courses in education and psychology for their professional and informational value.

The College is organized into the following departments: Agricultural Education, Arts and Sciences Education, Home Economics Education, Industrial Education and General Education.

During the past two years the Department of Agricultural Education has been able to meet the demand for trained teachers of agriculture in the State. During the scholastic year of 1920-21 a total of 19 students were enrolled for the work of this department. The present term finds the total of 23 students enrolled for the specialized work of the department. A number of students have made application for the work, but cannot be admitted, as they are unable to meet the farm experience requirements set up in the Federal Vocational education law.

By a co-operative arrangement with the Prince George's county school authorities a training or practice teaching department was established in the Hyattsville High School at the beginning of the scholastic year of 1920-21. This arrangement has solved the troublesome problem of providing facilities for practice teaching and the institution is now prepared to handle the classroom instruction involved in the training of teachers of vocational agriculture in the most approved way. This arrangement also makes it possible for the department to do far more research in its field than could otherwise be accomplished.

The call on the department for extension work in its line has continued to be very heavy, as in past years. During the present biennium the Professor of Agricultural Education has acted as State Supervisor of Vocational Agriculture for the State Department of Education and has found it necessary to devote considerable of his

time to that work. This arrangement has been found satisfactory to date, as the field serves as somewhat of a laboratory for this department and makes in the long run for a much better grade of classroom instruction in teacher training work. If the field work for the State Department of Education grows heavier, however, it will be necessary for the Professor of Agricultural Education to give up field work for that department or for this department to find funds sufficient to employ a full-time assistant in agricultural education. When all things are considered, the latter solution would probably be the better.

Demand for instruction in methods of handling general high school subjects made it desirable to establish a Department of Arts and Sciences Education. During the first year of the present biennium the enrollment in this department numbered 11. At present 19 students are enrolled for the specialized work of the department. Funds have not been available to employ a professor for this work. The instruction has been taken care of by the professors of Agricultural Education and Industrial Education. The work in this field to date has not called heavily on the time of these professors, as the enrollment has been in the freshman and sophomore classes in which no specialized work is offered. When the members of these classes become juniors and seniors a full-time professor for Arts and Sciences Education will be necessary. Not only should funds be available for a full-time professor in this work, but also to establish a training department for practice teaching in co-operation with the Prince George's county school authorities at the Hyattsville High School.

The first year of this biennium the Home Economics Education Department graduated its first group of students. At present twenty girls are enrolled in the work of the department.

Observation is conducted in Washington and nearby schools. Up to the present time funds for practice teaching have not been available. Funds should be made available immediately in order that a training or practice teaching department may be established at Hyattsville High School in co-operation with the Prince George's county school authorities. In this connection it is imperative that a competent critic teacher be employed.

Improvement of teachers in service and supervision of the Home Economics departments of the high schools for the State Department of Education have been carried on along with the resident teacher training work. This field work for the State Department of Education is considered desirable in that in the long run it makes for more practical classroom instruction in teacher training.

The effects of the Department of Industrial Education during the present biennium have been devoted to establishing classes in Baltimore for teachers and foremen in industrial lines.

The industrial teacher training courses that are being offered serve the needs of the following types of teachers: First, day teachers in

unit trade schools; second, teachers in night schools who are employed in the industries during the day; third, tradesmen who desire to prepare to become teachers of their respective trades in the public schools; fourth, tradesmen who may become instructors of apprentices in the industries; fifth, teachers of part-time students, such students being employed half time in the industries and enrolled for instruction in the public schools for the other half of the time.

The further development of the different types of industrial education in Baltimore will make it necessary to increase our teacher training work in that city. At the present time four evenings a week are devoted to it. The general interest that has been manifested in the improvement of foremen in the industries has made it necessary to prepare to offer courses in foremanship training in Baltimore and the development of this work will greatly increase the demand for service placed upon this department.

The work in general education embraces the general courses in education fundamental to the work of the other specialized departments of education, such as agricultural education, arts and sciences education, etc., and is in charge of the Council of Undergraduate Teacher Training. The work of this department is handled by the members of the specialized departments who seem best qualified to offer the various courses which the group deems desirable. This is without doubt the best way to care for this work, and in all probability there will never be need for special instructors to handle the general subjects of this department.

During the past two years the University has met a demand for instruction in elementary education above that given in the normal schools. This demand has been made by persons who have graduated from the normal schools and who have been teaching three or more years and who desire advanced training in their fields in order that they may prepare for positions as country supervisors, helping teachers, and principals of elementary schools. Many of the persons who are graduates of normal schools who enroll in the University Summer School desire especially to enroll for this work. It is a demand which these persons have a right to expect their State to meet and a demand the University should meet. To provide facilities for this work during the regular year and in summer a full-time professor of education should be employed who could not only offer resident instruction in this field, but who could also co-operate with the State Department in carrying on extension courses and field studies. For such a professorship funds should be available to procure a very well-trained and experienced person.

The Institution has also had considerable call for graduate work in education, both during the regular year and in the Summer School. The demand for graduate work has been coming pretty largely in the field of agricultural education, psychology and school administration. The present staff of the College of Education, as has been pointed

out, is inadequate to care fully for the demand for undergraduate instruction in education. In order to be in position to offer instruction in graduate work professors should be employed in psychology and school administration. The professor of educational psychology should also be a specialist in mental tests and measurements and a person who, along with his graduate and undergraduate work, could co-operate with the State Department of Education in making the field studies so necessary to effective instruction in this work. The professor of school administration should not only be prepared to handle graduate and undergraduate resident teaching in his field, but also extension work in teacher training and other field work.

These additions are very necessary, indeed, if the teachers in Maryland are to have the opportunities for professional improvement which the interests of the State demand. Many of the teachers and school officials in service at the present time fail to take the professional improvement from year to year which their positions require because of the expense involved in securing satisfactory courses under present conditions. The University should be provided immediately with funds to make such courses available.

Very truly,

H. F. COTTERMAN, *Dean*.

The Summer School

*The President of the University,
College Park, Md.*

Dear Sir: The courses given in Summer School are planned to serve three classes of students: (1) Students desiring courses in elementary, secondary and vocational education; (2) special students who find that they can come to college conveniently during the summer, as farmers, breeders, dairymen, home-makers, chemists, and others desiring special work; (3) regular students who are candidates for degrees in agriculture, chemistry, engineering, home economics, and liberal arts.

In the summer session of 1920 a total of 208 were enrolled. This number included students from practically all of the 23 counties of the State. A large percentage of this enrollment were teachers in the public schools of the State; the remainder were special students and regular college students enrolled for college credit courses. As in former years, the teachers enrolled manifested considerable disposition to elect as much college work as could be consistently articulated for their immediate professional needs, and quite a number made definite arrangements to return to the institution to complete work necessary for a degree. This tendency on the part of the teachers is highly gratifying, as it shows a desire on their part to broaden their training and thus increase their usefulness and service in their local communities.

In the summer of 1921 a total of 379 students were enrolled. Many former summer students returned to take degree work and the spirit to complete a definite course in training was more pronounced on the part of the group as a whole. This spirit was met in part by a number of new courses, especially in the field of secondary education.

The Summer School is more and more becoming an opportunity school for those who are unable to attend College in winter and who have not been able to complete college after graduating from high school. Many of these people at present are working in the public school system and are in great need of the type of training which the Summer School is offering. Not only has there been a demand for degree work, but during the past two years there has been an ever-increasing demand for graduate work, specially in the field of education. If the University is to serve the State as it should, additional funds should be made available for the Summer School in order that satisfactory programs may be arranged for the persons with varied degrees of training who knock at its doors.

As many of the members of the regular college faculty are engaged in special research in their fields during the summer, it is frequently rather difficult to set them free for the work of the Summer School. Quite often it has been necessary either to obtain an additional instruction for their work or to omit it from the program of studies entirely. In order that the work of the Summer School go on without interruption and without interrupting the necessary research phases of the work of the college departments, and in order to meet the ever-growing demands for summer school work, it is advisable that funds be provided to supplement the work of certain of the regular departments.

Very truly,

H. F. COTTERMAN, *Director*.

The Graduate School

*The President of the University,
College Park, Md.*

Sir: I submit herewith a very concise report, covering the Graduate School

1. Field Covered—Advanced instruction and research.
2. Importance to the State—The Graduate School offers advanced instruction in special subjects to better equip young men and women for the following important positions:
 - a—Experiment Station and other research.
 - b—Teachers in high schools and colleges.
 - c—Teachers and supervisors of vocational work, including agriculture and home economics.
 - d—The University of Maryland, being located within easy reach of the United States Department of Agriculture and other national research agencies, possesses an unusual opportunity to become the foremost graduate school for agriculture in the East

One of the requirements for a higher degree in the Graduate School is the preparation of dissertation. This is usually based upon some phase of a research project related to the agriculture or other industry of the State. In this way the graduate students, while getting their training, assist very materially in the solution of important projects.

3. Buildings and Equipment—The equipment of the entire University, including the Experiment Station, is available for graduate work.

4. Buildings Needed—In most of the departments the space and equipment now available are inadequate for even the present demands for graduate work. This applies especially to agriculture and other sciences.

5. Personnel—The personnel includes competent members of the various faculties of instruction and research. Owing to pressure of other University work, clerical assistance in the office of the Graduate School is urgently needed. I have been attempting to keep my research up to par, conduct standard graduate work in plant physiology for twelve graduate students, give two courses in biochemistry, complete the organization of the Graduate School and attend to the details of administration of this school. In addition to these duties, I have served as chairman of a Committee of Standards, which has involved a

great deal more work than is now evident, but I think we are doing work that will finally show important results. I have also served as chairman of the committee to organize the new School of Arts and Sciences, and as a member of the catalogue and study course committees. I have had outside work which, I am sure, the institution would expect me to perform. For example, I have recently been elected chairman of the Research Committee of the National Potato Association. This committee comprises a membership chosen from eight of the leading universities of the country and the United States Department of Agriculture. As chairman of the physiologists, I have been obliged to attend some meetings and handle considerable correspondence in connection with program and organization work.

Considering the present situation at this institution, the graduate work would be greatly benefited if an item were provided in the graduate budget to pay a part of the salaries of a few well-trained research men employed only for research and instruction in the Graduate School. These men would be attached to the subject matter group and the appointments approved by the President, Director of the Experiment Station, Dean of the Graduate School and the head of the subject matter department.

Salaries paid from the combined budgets of the Graduate School and Experiment Station, or Research Committee, would insure freedom from routine undergraduate instruction. Scholarship and demonstrated research ability should be the chief consideration in these appointments. Several strong departments are greatly interested in graduate work, but the plea is lack of time for this work on account of administrative duties and undergraduate teaching required of the present personnel.

The above recommendation is made with the provision that it will be possible to make such combinations with the Experiment Station or other research funds.

6. Other Facts—I am strongly of the opinion that it is absolutely necessary for efficient research work and graduate teaching to make it possible for men engaged in this work to attend at least one meeting a year of their national scientific association. Considering the salaries of these men, together with the increased cost of travel, it is next to impossible for many of them to attend these meetings on their own resources. It has been the policy of the Experiment Station in the past not to pay any of the expenses of men attending these meetings. Without this occasional contact with other research men and with the movement of scientific thought, a research man is in great danger of becoming provincial in his ideas and work.

Some of the research committees of other institutions have funds at their disposal to pay traveling expenses of certain research men which are not provided for by other funds. The Research Committee of this institution could use with great profit a small fund for this purpose. In order to limit the number for the present the man to

qualify for such aid could be required to have at least one graduate student in his charge or be expected to present a paper on research work in progress at this institution or to fulfill the duties of some office of the society. As a further stipulation such aid would only be granted to attend meetings not provided for by other funds. This procedure would stimulate both graduate and research work and add greatly to the efficiency of such work. One to two thousand dollars per year would meet the most urgent need for the present in this direction.

On account of the inadequate financial returns for the investment it seems almost necessary to offer some financial help to encourage most young men to properly prepare themselves for research and the better teaching positions. In order to compete with other institutions for graduate students, it will be necessary for us to be as liberal as possible in the matter of fellowships.

Respectfully submitted,

CHARLES O. APPLEMAN, *Dean.*

School of Commerce and Business Administration

*The President of the University,
College Park, Md.*

Sir: I have the honor of transmitting to you a report of our School covering its accomplishments thus far this season and its prospects for the future.

The School of Commerce is the most recent addition to the University and represents, in keeping with the policy of a State educational institution, an effort to meet the needs of the public. Since thousands of young men and women have chosen to engage in commercial activities as a means of livelihood, then the State owes such citizens a duty in endeavoring to prepare them as well as possible for their life work. The need, too, of providing in this State some training course under collegiate auspices as a preparation for the C. P. A. examinations has long been felt by accountants. The establishment of this School of Commerce in the University of Maryland has, therefore, met with approval of business and professional men.

Approval by the Board of Regents of the proposal to establish such a school in the University was not secured until August 12. Work was begun August 15. As nothing had been done previously, the first two weeks thereafter were spent in preparing copy for circulars, organizing a faculty, and formulating plans and policies. Actual publicity did not begin, consequently, until September 1, leaving about four weeks for promoting the courses. The School opened on September 28.

Much was accomplished in this brief time. The newspapers gave considerable publicity to the enterprise. Loyal friends aided in interesting prospective students. As a result, hundreds of inquiries were received concerning the courses. Interviews were held with hundreds of young men and women—many of whom were unable to qualify for entrance, others were moved, probably, by idle curiosity, and others were genuinely interested in the opportunities offered for self-improvement. Of these latter, some enrolled, some will enroll and some were unable to enroll because of financial reasons. Judging from this display of interest, we believed that we should have an enrollment of 500 students this first year. Although this number has not been secured, it may yet be reached before spring. Many educational and business men express surprise to learn of the enrollment we have obtained in so short a time and believe it to be, under the circumstances, as good as could be expected.

Many students from other schools have transferred their studies to the University of Maryland, and in this first year of the School we have organized classes in all the four years of the Evening School. We shall have, consequently, a graduating class this first year.

This winter another new section in accountancy will be organized. New students, too, can be admitted in the classes of Public Speaking, Applied Psychology and Advertising. New classes in Salesmanship, Foreign Trade, Foremanship, Employment, Management, Insurance and Retail Merchandising will be formed. There has also been a suggestion that the University provide a lecture course on Business Conditions. With about 10 or 12 speakers of such prominence as Senator Smoot, Secretary Hoover, Professors Irving Fisher, Bullock Taussig and others, it would seem easy to secure an advance list of 200 to 300 subscribers. With the support of business clubs, such a project seems feasible, but conferences with business men will be held before determining definitely the desirability of this effort. It seems attractive, and, if successful, would give the School and the University great prestige.

With more time, there will be greater opportunity to inform high school graduates and business employees of our courses. As in every educational institution, a student body is secured largely by the recommendation of former and present students; so, with each succeeding year, this School should obtain big results from this kind of advertising.

Greater chance, too, will be afforded for studying the needs of the city, and, without duplicating the work of other institutions, endeavor to provide distinctive and desirable courses of study.

Needs—The most pressing needs of the School of Commerce are:

(1) An Advisory Committee of business men and representatives of the University to aid in formulating the proper policy and promoting the School.

(2) A building specially adapted for our classes. At present the classes are scattered. Some meet in rented rooms of the business colleges. It would give the students a feeling of entity with the University if they could be accommodated in a special building. This will, of course, come in time. Probably with provision for the accommodation of the Dental School in the new building soon to be erected, the present Dental Building might be remodeled for the housing of the Extension Courses in commerce.

Decidedly, the outlook for this School is favorable. It is destined to be a success and will grow increasingly so from year to year. To make it so, all who are engaged in it are willing to serve to the best of their ability.

Respectfully submitted,

M. A. GLEMENS, *Director of Baltimore Branch.*

School of Medicine

*The President of the University,
College Park, Md.*

Sir: During the years 1919-1920, 1920-1921, the usual activities have been carried on.

Increased pre-medical requirements adopted 1919 diminished the number of students entering for two years. This appears in the present relatively small upper classes now present. With the present influx of students, twice as many having applied this year in the freshman class as could be accommodated, the advanced classes will show larger numbers.

There are about 170 teachers in the school, of whom only about 30 are paid, and of these only 12 are full-time teachers. Two of these were added during 1920-21. The school needs at least four more full-time teachers and a proportionate number, 10 to 12, part-time teachers. The amount of money available for salaries has made it impossible to secure a sufficient number of teachers. The pay of the full-time teachers is in no case more than \$3,600, and in most instances less.

There are two "full half-time" teachers in the medical group. This is a new departure for the school, but it is believed that the arrangement will do much to improve our teaching in medicine, making possible a complete reorganization in this department.

It is the opinion of the Medical Council, and this seems to be in line with the opinion of the medical educators generally, that it is not wise to have full-time teachers in clinical branches, especially as heads of departments.

One new laboratory has been added to our facilities and is being used for instruction in histology, embryology and bacteriology. We still need much laboratory space and added equipment, though several thousand dollars have been spent in added laboratory equipment during the last two years. One of the imperative needs of the school is increased laboratory facilities.

Our students are being taught in the University and Mercy Hospitals. The serious increase in the cost of maintenance of patients in hospitals has compelled the authorities to replace some of the free patients by those who could pay small sums for board and room. This not only deprives many worthy and needy patients of service which they badly need, but reduces the number of patients for demonstration. These hospitals are turning away patients whose needs are

imperative because of limited space. Thousands of cases are turned away during the year. Provisions made for these cases would be of great advantage to the State and city, and also to the school.

The outdoor departments are emerging from the disorganization occasioned by the war. During the year 1920 the Mercy Hospital Dispensary cared for more than 32,000 cases, and the University Hospital for nearly 35,000. At this time the University Hospital Dispensary is caring for patients at the rate of more than 50,000 per year. See report, which follows, for month of October:

DISPENSARY REPORT FOR OCTOBER, 1921

Department	New Cases	Old Cases	Total
Pediatrics	129	768	897
Dermatology	150	415	565
Gynecology	164	356	520
Surgical	118	361	479
Genito-Urinary	31	400	431
Obstetrics	113	314	427
Ophthalmology	84	218	302
Medical	60	216	276
Neurology	7	164	171
Orthopedics	9	130	139
Laryngology	44	93	137
Gastro-Intestinal	17	70	87
Tuberculosis	10	14	24
Proctology	7	11	18
Psychiatric	1	1	2
	<hr/> 944	<hr/> 3,531	<hr/> 4,475

It is impossible to estimate the good done by these outdoor agencies. Not only are the sick treated, but they are instructed in models of living, hygiene, infant feeding, care of pregnant and parturient women, ventilation, etc., all of which tend to improve the living conditions and ideals of a tremendous percentage of our citizens. Much of the care of these cases under careful supervision devolves upon our senior students.

There are at present about 15,000 volumes in the library. The library has had only a few additions of new books during the last two years. The current periodicals to the number of 50 are received regularly and are bound, if sufficient money is available. This should be a most important aid to the work of the students and the instructors, and will be whenever a sufficient number of recent books and periodicals are available, with proper reading and study rooms.

The Medical Department is instituting an extension course, which will, we believe, be highly beneficial to the citizens of the State. It is

offering the service of our teachers and laboratories to any graduates in medicine practicing in the State who may need help to solve the problems which arise in their relation to their various communities. Any medical society or county health official may call freely upon our teaching staff for advice and such help as is available. It is our desire to establish the closest relations with the medical profession of the State in order that whatever advantage might accrue to our citizens through their affiliation with a strong medical school may be made easily available.

Respectfully submitted,

J. M. H. ROWLAND, *Dean.*

The School of Law

*The President of the University,
College Park, Md.*

Sir: The Act which consolidated the University of Maryland and the Maryland State College into an institution under the name of the University of Maryland took effect on the first day of June, 1920.

At the commencement on June 1, 1920, just prior to this consolidation, the graduating class of law students numbered 67, and the number of students in attendance upon all of the classes during the session which then closed was 346. This was greatly in excess of the number of students in attendance during the session 1918-1919. At the commencement on June 1, 1919, the graduates numbered only 24, and the students in attendance during the session numbered only 173. This was due to the fact that in the two preceding years many who would have otherwise been in the School were serving their country in the military and naval forces of the United States during the World War.

After the conclusion of the war the number of students in attendance upon the law schools of the country immediately increased. At the end of the session 1920-1921, being the first session after the consolidation, the number of students in attendance at the Law School of the University of Maryland was 470. The graduating class, however, of that year numbered only 33. The decrease in the number of graduates may be accounted for at least in part by a somewhat stricter marking of the examination papers on the part of the faculty. The number of students registered for the current session is 489. Women were admitted as law students for the first time in 1920, and there are now 19 women in attendance upon the several classes. The classes are now so large as to tax the capacity of the lecture halls and the proper teaching of such large classes is becoming a serious concern.

There is no room in any of the university buildings that is adequate for the proper conduct of examinations and it is necessary to hire halls at some distance from the University for this purpose. There has been some suggestion that the number of students admitted each year should be limited to those who can be properly accommodated. Probably a better course would be to raise the requirements for admission to accord more fully with those of the best law schools.

The Law School needs a new building, sufficiently large to accom-

moderate the growing demands of the School and in a new location nearer to the courts. The old College of Physicians and Surgeons, on the corner of Calvert and Saratoga Streets, would afford a suitable site, and this building could probably be remodeled to suit the purposes of the Law School and the present law building could be turned over to the Medical School, which needs increased space.

The Law School has no endowment, but it has never been a burden on the University treasury. The expenses of the School, and the modest compensation of the teachers and officers have been provided from tuition fees, which are moderate, and there has never been a deficit.

The building up of a good law library should be kept in mind, and any surplus in the receipts of the Law School after reasonable compensation to the teachers may well be devoted to this purpose.

When it became necessary, about fifteen years ago, to enlarge the law building, this was accomplished by a bond issue of \$15,000. These bonds were subscribed for by the teaching staff; and the mortgage securing the bonds provided that out of the fees each year a payment should be made to the Trustee Sinking Fund to retire all of the bonds at maturity. This arrangement has been strictly complied with and the mortgage will be paid off from the Sinking Fund and released at its maturity on July 1, 1922.

Respectfully submitted,

HENRY D. HARLAN, *Dean.*

The University Hospital

*The President of the University,
College Park, Md.*

The following report of the University Hospital for the biennial period, October 1, 1919, to September 30, 1921, is submitted for your consideration.

During this period many changes have occurred both in the personnel and management of the institution. The beginning of this period witnessed the readjustments following the war, when this hospital, in common with most others, suffered from lack of medical and nursing personnel. The cost of maintenance also has greatly increased, due to the continued high cost of supplies and the higher wages paid all employees.

This hospital is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, as the Baltimore Infirmary and had four wards, one of which was used exclusively for eye cases. A new building replaced the old one in 1895, and by successive additions the hospital has now reached a capacity of 250 beds. It has departments for the care of practically all classes of diseases, except the insane, acutely contagious diseases and tuberculosis.

This hospital also has the unique distinction of being the first hospital in the country directly controlled by a medical school—the Medical School of the University of Maryland—for the teaching and training of medical students. This association continued uninterruptedly until July 1, 1920, when the hospital and medical school were amalgamated with the Maryland State College.

The hospital, being a teaching hospital, has always had a large percentage of free patients. It will be noted from the attached statistical record that during the past two years we have admitted a total of 8,783 patients. Of this number 2,522 were free and 3,205 were only part pay. This makes a total of 5,727 patients, or 65.2 per cent., that were treated at a loss.

This hospital has a contract with the City of Baltimore to take care of a percentage of the indigent sick, for which it received a per diem rate covering about one-half of the actual cost of their care. For the care of the indigent sick the State compensates the hospital at the rate of 80 cents per day per patient.

The activities of the hospital are increasing greatly, and only those intimately associated with it can realize its value to the community and the State. With these increased activities, naturally the cost of

maintenance has jumped, and it has now reached a stage where increased funds are necessary if we are to fulfill all our obligations to the sick, maintain our high standard and furnish the necessary patients for the proper clinical training of the medical students. The hospital has only been able to maintain its high standard through the generosity of its friends.

Some of the urgent needs of the Hospital are: New laundry machinery to replace the worn and antiquated equipment now in use; a new sterilizing apparatus for the operating floor; a new X-ray machine that will meet the growing demands for the therapeutic treatments; a mattress sterilizer; a hot-water tank to replace an old one now in use; some very necessary laboratory equipment; an ice-making and cold-storage plant; a new elevator and funds for very necessary repairs and painting.

In 1920 a drive for funds was made, during which \$190,000 was raised. This fund is to be used for the construction of a modern nurses' home, something that has been needed by this hospital for a number of years. Construction on this building has already begun.

Besides this fund, a sum of \$19,000 was raised among the medical men interested in the University Hospital to pay a maintenance deficit that had gradually accumulated. The Women's Auxiliary Board has also been most generous in their help to the hospital. They have given us a great many things that otherwise we could not have afforded, and have been helpful in so many ways that contributed to the comfort and general welfare of the patients. They furnished funds for making cubicles in both white women's wards; they have donated and installed a complete new sterilizing outfit in the maternity; have supplied electric fans for all the wards, and have donated countless smaller things for use in both the hospital and dispensary. Both their material help and loyal support have been invaluable.

Another feature of volunteer work of inestimable value are the Red Cross aides. These ladies, under the direction of Mrs. Robert K. Noble, act as nursing aides in all departments of the dispensary. They do the work that would otherwise be done by paid graduate nurses, thereby saving the hospital a considerable sum. Their work is in every way satisfactory, and the enormous increase in our dispensary clinics is in no small measure due to their loyal and painstaking efforts. Besides their personal services, they have procured much in the way of equipment for our dispensary, and at the present time are raising a considerable sum for the complete equipment of a thoroughly modern cystoscopic room.

Our maternity department is one of only two such clinics in Baltimore taking care of free obstetrical cases, and, due to our limited capacity, only 24 free beds, we are compelled to limit our admissions to pathological conditions. No appropriation is made either by the City of Baltimore or the State of Maryland for the care of

obstetrical cases, and the only compensation the hospital receives is the 80 cents a day paid by the State of Maryland for the care of the indigent sick. Both increased funds and increased space are needed for this department.

The out-patient obstetrical department is growing rapidly, and its further growth is only limited by the lack of available funds. The City of Baltimore furnishes compensation for the treatment of a specified number of patients in this department.

The children's clinic in the dispensary is growing by leaps and bounds and constitutes one of the most gratifying features of the whole dispensary. The visits in this department increased 5,000 in one year.

The work in the whole dispensary is increasing enormously, as is seen by the 13,000 increase in visits of the last year of this report over the first. It is a serious question now how to accommodate these various clinics in the dispensary, for the dispensary, like all other departments of the hospital, is fearfully cramped for space. For all this work in the dispensary the hospital receives no appropriation whatever from either the city or State. Certainly a charity of this magnitude needs some consideration.

Our Training School for Nurses was handicapped greatly during and following the war. The number of students was greatly below the needs for the hospital, so that it has been necessary to employ graduate nurses in order to carry on the work. This one item has greatly increased our salary budget. But fortunately now our Training School is in a very satisfactory condition. The number of students is rapidly increasing, and I think that after our new nurses' home is completed and our nurses comfortably quartered we will thereafter be able to have our classes up to full quota. The curriculum of the Training School, due to the painstaking efforts of its supervisory officers and instructor, is now of the highest order.

To all the loyal people connected with the institution, in whatever capacity, I feel is due its success. To all of these I feel personally indebted.

Following are tables which show the extent of the work of the hospital:

REPORT OF OUTSIDE OBSTETRICAL DEPARTMENT

October 1, 1920, to September 30, 1921.

Number of white cases treated.....	117
Number of colored cases treated.....	774
Total number of births.....	906
Maternal mortality.....	1
Baby mortality.....	26
Still births and abortions.....	90
Cases admitted to hospital.....	22
Total number of Wasserman blood tests.....	737
Total number of positive results.....	215

REPORT OF MATERNITY

	Oct. 1, 1919 to Sept. 30, 1920	Oct. 1, 1920-1921
Total number of admissions.....	386	402
Total number of births.....	355	375
Maternal mortality.....	9	12
Baby mortality.....	26	22
Still born and abortions.....	20	30
Caesarean sections.....	27	27
Instrumental deliveries.....	33	42

I.

STATISTICAL REPORT

	Oct. 1, 1919	Oct. 1, 1920
Patients present.....	167	146
	Oct. 1 1919-20	Sept. 1 1920-21
Patients admitted—Males.....	2,197	2,141
Females.....	2,218	2,227
	<hr/> 4,415	<hr/> 4,368
Total number of patients treated.....	4,582	4,514
Total white patients admitted.....	3,272	3,741
Total colored patients admitted.....	643	627
Total free patients admitted.....	1,236	1,286
Total part pay patients admitted.....	1,621	1,584
Total free patients admitted.....	1,555	1,498
Largest number of patients treated any one day	244	213
Smallest number of patients treated any one day	121	133
Average number of patients treated daily.....	183	173
Average duration of stay in hospital in days...	14.8	14.4
Total number of hospital days.....	67,126	63,140
Per capita cost per patient per day.....		
Total discharges and deaths.....	4,612	4,352
Number of deaths.....	226	201
Mortality percentage of patients treated.....	4.5%	4.4

Services to which Patients were Admitted—

Medical	401	571
Surgical	2,005	1,778
Gynaecological	540	525
Obstetrical	324	353
Pediatrics	61	57
Neurological	109	78
Eye and Ear.....	71	29

Nose and Throat.....	726	781
Orthopaedics	44	49
Genito-Urinary	92	55
Dermatology.....	12	6
Proctology.....	14	25
Gastro-Intestinal.....	9	41
Roentgenology and Radium.....	4	17
Dental.....	3	3

II. OPERATING ROOM REPORT

	1919-20	1920-21
Major operations	3,123	2,768
Minor operations	564	552
Total operative procedures.....	3,687	3,320

III. ACCIDENT ROOM REPORT

	1919-20	1920-21
Total treatments rendered..... (Not available)		4,850
Number of free cases..... " "	" "	1,705
Admitted to hospital from accident room.... " "	" "	254

IV. CLINICAL AND PATHOLOGICAL LABORATORY REPORT

	1919-20	1920-21
Blood pictures.....	989	1,139
Blood cultures.....	138	129
Chemical examinations of blood.....	468	554
Wasserman reactions.....	3,486	4,226
Widal tests.....	44	66
Examination of stomach contents.....	127	103
Examination of feces.....	142	143
Examination of sputum for tuberculosis.....	26	48
Bacterial cultures and smears.....	366	1,485
Examination of 24-hour specimens of urine....	324	571
Special examination of urine.....	138	195
Examination of spinal fluid.....	32	22
Examination of blood for malaria.....	4	13
Blood typing.....	5	23
- Typing sputum.....	22	14
Animal inoculations.....	4	8
Autogenous vaccines.....	9	6
Examination—transudates and exudates.....	5	13
Autopsies	37	41
Surgical specimens examined.....	1,281	870

This report does not include routine urine examinations or the laboratory work done by the residents and internes.

V.

DISPENSARY REPORT

	1919-20	1920-21
Number of new patients.....	9,815	12,545
Visits of old patients.....	25,640	35,741
	<hr/>	<hr/>
Total visits during year.....	35,455	48,286

The cases were distributed among the various clinics as follows—

Medicine	2,124	2,891
• Surgery	4,364	4,513
Gynaecology	2,103	4,846
Obstetrics	3,872	4,938
Pediatrics	5,104	10,895
Orthopaedics	1,166	1,651
Dermatology	6,974	8,070
Genito-Urinary	2,210	2,801
Neurology	1,853	1,618
Nose and Throat.....	717	1,451
Tuberculosis	312	326
Gastro-enterology	909	945
Eye and Ear.....	2,649	3,054
Proctology	72	187

REPORT OF X-RAY DEPARTMENT

	1919-20	1920-21
Treatment.....	186	233
Number of exposures.....	8,198	7,425
Number of plates and films used.....	6,162	6,387
Number of patients.....	3,504	3,502
Fluoroscopic examinations.....	562	539

Respectfully submitted,

K. B. JONES, *Superintendent.*

Nurses' Training School

The organization of the winter class schedule in the Nurses' Training School was accomplished in the face of seemingly insurmountable difficulties. We were not able to procure a competent full-time instructor until January 1. Previous to this the classes were carried on by instructors from the Medical School, who most generously gave of their time and talents, and carried the work well along until we were able to obtain our instructor.

The theoretical work has been organized and carried forward with such system and efficiency that the results are beginning to be most plainly shown in the wards of the hospital. Follow-up work in practical and laboratory work has been carried on in as satisfactory a manner as is possible under existing conditions, namely, shortage of students and lack of equipment; the lack of ordinary ward equipment not only has been a severe tax on the nursing staff, but detrimental to their education. Some of this has now been remedied—as steam tables in the diet kitchens, sanitary hoppers in the service rooms, a new sterilizing outfit in the maternity donated by the Woman's Auxiliary. But much still remains to be added before our wards are equipped in a manner to give the students proper training.

Also the equipment for teaching has been very far from satisfactory during the year. However, we have had some additions—a skeleton obtained through the kindness of Mr. Smardon, and a very excellent set of charts were purchased for us by the hospital. We hope much more will be added next year in the way of a reference library.

The housing of the students has also been a serious and depressing problem, though, with the excavation for the new home going forward so rapidly, this trouble is fading rapidly into the background. The architect's plans for the new home gives promise of a home comfort and an opportunity for a proper teaching unit that has never before been enjoyed by the students of this school heretofore. Already the distressing shortage of student nurses has become somewhat less acute. An increase of twenty-four students in the past year has materially helped us over tremendous difficulties.

Respectfully submitted,

LUCY ANN MARSHALL, R. N., *Supt. of Nurses.*

School of Pharmacy

*The President of the University,
College Park, Md.*

Sir: During this biennium the School of Pharmacy brought its entrance requirements and its curriculum to a full collegiate standard, rectifying the condition in the school thought to require most immediate attention. The faculty has not been inconsiderate of the need for improvement in the laboratory and lecture room space, as well as the need for very necessary equipment. As during this biennium the school was required to exist upon its income from students' fees, not all of these necessary improvements could have attention and, consequently, the matters of entrance requirement and curriculum were given first attention. This means, in brief, that our candidates for graduation enter with the requirement of the completion of a standard four-year high school course or its equivalent, and carry, in addition to the strictly pharmaceutical subjects, general educational subjects sufficient to give them full collegiate credit. In this phase of its work the School of Pharmacy has taken an advanced stand among similar institutions in the United States, in the belief that the pharmacist should have the opportunity of securing, along with his technical and special training, as broad a general education as is made available to those engaging in the study of other sciences and professions.

During the next biennium we hope to adopt a curriculum extending over four years for those who wish to secure advanced education in pharmacy, and also to devote a considerable part of the aid which we hope to secure from the State to the improvement of our equipment; and while additional equipment is absolutely necessary to the perfection and extension of our work, it is not such a pressing need as is adequate space. Our enrollment in the first year class is about 55, and this taxes our available space to the uttermost. No doubt the enrollment will increase, as it has done during this biennium, and the school will find itself taxed beyond its limit, very likely, at the beginning of the next session. It is the hope of the School of Pharmacy to be able to obtain adequate space for its work, and, in addition, to take over all pharmaceutical work in connection with the Hospital, Medical and Dental Dispensaries. This, we believe, will result, not only in better service to the public, the hospital and the dispensaries, but will result in a financial saving to the institution and at the same time give better and more particular instruction to our students than can be given under present conditions.

Previously we had but one full-time teacher connected with the staff of the School of Pharmacy, but during the biennium we have had three full-time teachers on our staff and, beginning with the next biennium, will have four, which will fully meet all the requirements as to full-time teachers. As for instance, we are happy to report that the State of Ohio, whose requirements as to schools of pharmacy are possibly higher than those of any other State, has recognized the School of Pharmacy of the University of Maryland as a Class A school among about only one dozen such schools recognized in the United States. Beginning with the next biennium, we will have a full-time teacher connected with the major divisions of our work and always available to students doing regular and special work.

Another pressing need of the School of Pharmacy is better library facilities, and this phase of development is to have some attention during the coming biennium. It is the belief that many books and other publications of historical and present interest in pharmacy will be found available in the State without appreciable cost, and it is the purpose of the School of Pharmacy to collect these as far as possible, which, together with what we now have, will form a nucleus towards an adequate library.

Beginning with the next biennium, or as soon thereafter as is possible, it is our hope to engage in some extension work in the State, particularly after we have been able to take over and arrange for the pharmaceutical work above referred to in connection with the hospital and dispensaries here in Baltimore. This extension work at first would consist mainly in placing the facilities of the school at the disposal of the pharmacists of the State, and acting as their representative in connection with all legislation and educational enterprises, both national and State. The School of Pharmacy has established a close relation with the Maryland Pharmaceutical Association, the members of which association are taking an active interest in the development of the school, and it is the policy of the school to impress the pharmacists of the State with the fact that this institution is the property of the State and that its primary endeavor is to serve the public and the pharmacists as best it can.

Respectfully submitted,

E. F. KELLY, *Dean.*

The Eastern Branch

(This is the school maintained at Princess Anne for the education of negroes.)

*The President of the University,
College Park, Md.*

The work of the Eastern Branch has steadily progressed during this biennium. Thomas H. Kiah, Ped. D., is the principal, and he is supported by an able faculty, consisting of nine men and six women. The teaching staff consists of college and university trained men and women or those who have made special preparation for the department under their care. There are enrolled a total of 180 students, 73 men and 107 women.

All students are required to take agriculture or some trade or industry, in addition to the scholastic subjects. One-half the time is devoted to scholastic subjects and one-half to the industries. All the labor on and about the place, except special buildings constructed under contract, is done by the students. The graduates in 1921, numbering 13—2 men and 11 women—each received certificates in industry as well as the scholastic diploma.

During this biennium special organization of the courses of study has been effected, but the new courses have not been in operation sufficiently long to mark any special changes. We hope, however, in the future to develop especially in agriculture, horticulture, truck gardening and kindred subjects a thorough, up-to-date school. This will necessarily require some additional investment both in equipment and in the teaching force.

The revised courses of study aim to accomplish a proper union of the theoretical and practical, thereby creating additional interest in the problems which the young people soon must face, and to furnish them with the required training for successful farm life. It is not proposed to abandon cultural courses of instruction, but to illustrate and develop a cultural course by practical experimentation.

In the recent past the school has suffered two disastrous fires. The central buildings, which housed the principal and his family, provided entire boarding department and furnished most of the classrooms, were entirely destroyed by fire. These have been recently replaced at an approximate cost of thirty-five thousand dollars, all of which was supplied from the funds of the Morgan College Corporation. In addition a portable building and equipment costing, with equipment,

approximately three thousand five hundred dollars, was furnished by the State. This is used for purposes of recitation and instruction. The barn on the State property was struck by lightning and destroyed. This has been replaced from the insurance funds and from the funds of the State.

Morgan College owns 117 acres of land, and the State owns 73 acres; total, 190 acres. Of this, approximately 50 acres consist of forest and waste land or is occupied by school buildings, leaving about 140 acres for cultivation.

The crops consist of corn, wheat, white potatoes, sweet potatoes, tomatoes and garden truck generally. Recently truck gardening and horticulture have received increased attention through the appointment of Barton White, a graduate of Hampton, who has had wide experience in this business.

The Eastern Branch in all its history has been very active and successful in the preparation of teachers for the elementary colored schools, especially for the Eastern Shore. This activity continues and is likely to be very much extended as the schools improve and introduce vocational subjects. We should give even more attention at the Eastern Branch to this very necessary work in the interest of the State as a whole.

County Demonstration work under the direction of Mr. Martin has steadily increased in interest and effectiveness. This work ought to be strengthened by the permanent addition of women workers and, if possible, the area over which the work is done should be restricted in order that the progress might be more thoroughly worked out.

For nearly two years the Eastern Branch has held a great Farmers' Day Conference the last week in April. People come from near and far to listen to the able instruction from those nationally and locally successful in agriculture.

A fine young orchard of apples, peaches and pears has just come into bearing. The past year very promising prospects were nipped by the hard freeze, which destroyed practically all the standard fruits in this part of Maryland.

A small but very select dairy herd of registered Guernsies is maintained. From this herd very valuable improvements have been made in the stock of all the region round about the Eastern Branch. Increased attention should be given to stock raising, especially for domestic purposes.

In the region of the Eastern Branch one of the chief factors in agriculture is proper attention to farm drainage. The older part of the plant of the Eastern Branch has been thoroughly drained and the effects are very manifest. Practically all the open ditches on this part have been abolished and the soil is cultivated in a far better way than is possible where the land is not drained. A wider range of successful cropping is also possible.

There is now manifested among colored people greatly increased

interest in agriculture, market gardening, stock raising and poultry craft. The increased profit to the farmer, especially to the farmer who is able to do his own work, has resulted in considerable accumulation of capital and increased ownership of small farms. This has led to increased interest among the students in farm problems. Our manifest and imperative need now is to standardize thoroughly educationally the instruction and work on the farms and gardens for the purpose of making the students and graduates successful managers of home projects.

The experimental plots of the university on the State farm are furnishing excellent data for instruction and are showing both teacher and student just what can be done in an experimental way. The co-operation of these gentlemen from the university is highly appreciated.

This school greatly needs additional land for thorough carrying out of both intensive and extensive agriculture, and for the furnishing of sufficient grazing land for the stock.

A thoroughly equipped recitation and administration building, with laboratories for complete experimentation, especially during the winter months, and for the study of animal and plant life is a great and pressing necessity. There should also be provided greatly increased dormitory accommodation, especially for boys. Proper inducements in the way of living accommodations, connected with the courses of study outlined, will turn the minds of many to industrial and agricultural pursuits who would otherwise wish to choose professional subjects. The ranks of the productive industries will only be filled by granting equal honors and equal training to those who choose the more practical lines of life. It is therefore to be hoped that there will be an early response to this need and that additional grounds and buildings will be provided.

With these larger needs in buildings and grounds will also come the necessity of additional equipment in the way of tools and machinery to operate the plant in an up-to-date way.

The fine example of co-operation both, racial and institutional, exemplified in the Eastern Branch of the University of Maryland deserves much credit. It should be continued, for it has passed the experimental stage and is one of the most helpful and hopeful signs of that larger co-operation which is necessary at all times.

Respectfully submitted,

J. O. SPENCER, *President*

Department of Military Science and Tactics

*The President of the University,
College Park, Md.*

Sir: This report covers the operation of the Military Department of the University of Maryland for the school years 1919-1920 and 1920-1921.

The Department of Military Science and Tactics is organized as one of the educational features of the University and is based upon the provisions of Special Regulations, No. 44, War Department, 1919.

The original authority for establishing military training at this institution was under the Land Grant Act. By an Act of Congress, June, 1916, the military training was given a broader aspect by the establishment of the Reserve Officers' Training Corps. This institution in 1917 was granted authority to maintain an infantry unit of the Senior Division, and since that time, except for a short period during the war, the Military Department has been functioning under that authority.

The University requires students in their first two years to take the course in military training; after such period the military work is purely voluntary.

During the year 1919-20 Captain G. A. Matile, infantry, was the professor of Military Science and Tactics. He had one assistant. The strength of the R. O. T. C. unit for that year was 270. The organization of the unit was a battalion of three companies.

A great many difficulties were experienced, due principally to reaction due to the World War. Most of the students had had military training of one kind or another during the war, and they looked with distaste on having to make the required number of hours of military training in order to receive their credits.

However, the difficulties of this transition period were overcome and good results were obtained before the end of the year.

The school year 1920-21 was started more auspiciously for the Military Department, as a framework had been constructed the previous year and 238 students were enrolled in the Military Department, of which number 18 were volunteering for the advance course work. Unfortunately, at this time, Captain Matile was incapacitated for duty and had to retire from the military service and was in turn relieved from duty with the University.

As a result Major R. H. Leavitt, infantry, was detailed in Captain Matile's stead, taking up his duties in November. This was unfortu-

nate in a way, as a proper schedule of work could not be made up at the beginning of the year, nor was the new professor of Military Science and Tactics able to grasp all the details of the scheme of instruction then in effect.

The first matter of importance which came up was relating to students who had had previous military service, either in the Regular Army or in the S. A. T. C. It was decided to give credit for this work, and as a consequence the number of students taking military instruction was materially reduced, the strength of the unit at the end of the year being but 186. Notwithstanding the small number that was left, the action taken proved beneficial to the unit as a whole.

During this school year the personnel was increased by two sergeants of infantry, detailed by the War Department to the University, making a total personnel of one officer and three non-commissioned officers of the Regular Army. Also the War Department prepared a regular schedule of studies to be pursued in the four years.

This schedule was adopted the first of December and was arranged as follows:

(a) For Second Year Advanced Course Students (Seniors), five hours per week, of which two hours were practical and three theoretical.

Subjects pursued:

Physical training; infantry drill (practical); minor tactics (practical and theoretical); musketry (practical and theoretical); military history and policy of the United States (practical and theoretical; administration; military law (practical and theoretical).

(b) First Year Advanced Course (Juniors); five hours—two practical and three theoretical.

Course of study:

Physical training; infantry drill (practical and theoretical); field engineering (practical and theoretical); infantry weapons (practical and theoretical); minor tactics (practical and theoretical).

(c) Second Year Basic Course (Sophomores); three hours—two practical and one theoretical.

Course of study:

Physical training; infantry drill (practical and theoretical); military map reading and surveying (practical and theoretical); infantry weapons.

(d) First Year Basic Course (Freshmen); three hours—two practical and one theoretical.

Course of study:

Physical training; infantry drill (practical and theoretical); military courtesy (practical and theoretical); small arms firing (practical and theoretical); personal hygiene (lectures); infantry weapons.

This schedule was carried out and, with regular class hours assigned, excellent work was done.

At the end of the school year the four students taking the Second Year Advanced Course were found proficient, recommended for commissions and finally commissioned by the War Department as second lieutenants of infantry in the Officers' Reserve Corps.

The school year 1921-22 started September 21, 1921, with an enrollment in the Military Department of 288, and of this number 37 were taking the Advanced Course. This enrollment for this year is the largest that the R. O. T. C. has had. The organization is one battalion, composed of a headquarters company and four rifle companies.

Three additional officers were assigned to the University by the War Department.

This will undoubtedly be a most successful year, as more time and thought has been given to the outline of the course of study and the manner of presenting the same.

The advantages of military training in the colleges of the country now are many. Chief among these may be mentioned the physical development of students, habits of discipline, a course which will fit the students for not only military work, but will be a help to them in their business career. It offers the United States a reserve of partially trained officer material in case of necessity. **Another one** of the advantages while at school are the summer camps which students may attend, these providing a place to complete the training had during the school period.

In order to carry on the required work in a more thorough manner, allow me to state that a suitable building for the military department is necessary. An armory should be built by the State to care for the thousands of dollars worth of Government property loaned by the Government, and also provide room for practical instruction in inclement weather. Further, houses should be erected to take care of the officers and enlisted personnel on duty with the military unit. At present those now on such duty live anywhere from two to nine miles from the University. This is an expense which falls very heavy on the officers and enlisted men detailed by the War Department to handle the work.

R. H. LEAVITT, *Maj. Inf. (D. O. L.) and*
Professor of Military Science and Tactics.

The Library

*The President of the University,
College Park, Md.*

Sir: I submit herewith my report on the library of the University of Maryland for the two years ending October 1, 1921.

During the college year the staff of the library consists of a head librarian, one full-time assistant, and two part-time student assistants. The open hours are from 8.30 A. M. to 5.30 P. M. Monday to Friday inclusive, and Saturday from 8.30 A. M. to 12.30 noon. During the day the librarian and assistant are in charge, but in the evening a student assistant acts from 6 to 10 P. M., and on Sunday from 2.30 to 5.30 P. M. and from 6 to 10 P. M.

Our biennial report of October 1, 1919, stated that the two main objectives at that time were the renovating and refurnishing of the library building, and the recataloguing of the books. The first-named plan has been carried through the past two years, with the result that the entire department has increased in comfort, appearance, and usefulness—but the end is not yet accomplished. The recataloguing of the entire book and pamphlet collection has gone forward very slowly, owing to the lack of help. In the two years covered by this report, 2,199 books have been accessioned and catalogued. This includes all new purchases as well as several hundred volumes already in stock that had not been previously recorded. This is a big proposition when it has been done by the librarian as the daily reference work and general business will permit.

We are, however, getting closer to a correct inventory with each year's work, so that now we know that we have in the main library and the various departmental collections 10,000 books, together with quantities of valuable, unbound material. Much of this latter accumulation should be bound in order to preserve it—for a great deal of the older government bulletin literature, both national and State, as well as scientific and general periodicals, cannot be duplicated. For this reason we have spent more money on bulletin and periodical binding than on the purchase of new books in the past year, feeling that the reference work of the entire institution would ultimately suffer less by this unusual transfer of our limited book funds.

The summer school work of 1920 was again heavy. Many of the foundational books in education have only lately begun to be added, and at their present cost it is a difficult undertaking to satisfy a busy summer school and its progressive instructors who, naturally,

expect to find in a University library the old, as well as the new, books on their subjects.

An increase from \$300 to \$700 in our student help budget has been valuable in carrying on the work of the year, although we cut down painfully on the help that we needed in order that we might divert \$300 of this amount to periodical binding.

It has never been the custom of individuals or classes to offer this library gifts, but this unwritten law was most pleasantly broken by the summer school of 1919, which left with us our first piece of art—a medium sized Winged Victory. The summer school of 1920 presented some reference books on teaching. The Maryland Library Commission, acting as a distributing agent for the American Library Association War Service Committee, presented this library with 187 volumes of reference books on a variety of subjects, largely Agriculture, Sociology, and Political Science. This excellent and varied collection has added materially to our resources.

The following statistics show a promising increase in our circulation since the last biennial report was made.

The Library Extension Loan System, inaugurated in June, 1919, has increased to such an extent that only our disability to supply the varied demands and our lack of regular clerical assistance have kept it from being one of our livest projects.

Classes in library Science have increased in size. This course in learning to use the reference books of the library has proved to be a personal help to the students, as well as to the librarian, throughout their college course.

Among the recommendations urged in our last biennial report was the proposition that a temporary cataloguer be secured who, in a few months of uninterrupted work, could catalogue this entire central library and the various departmental ones. We now know more acutely than at that date how needed this work is, and trust that as soon as funds will allow this project may be carried out.

The keynote of this report is that, in spite of all efforts to keep abreast of the needs of the institution, we are continually forced to acknowledge our serious deficiency in the literature of particular subjects. New teachers take up new lines of work, the graduate school stimulates increased reference work, research students ask for material in their fields of investigation—and the library has been unable fully to meet their needs. If our University library is to be of constant and growing value, and if the teachers, students, and experiment station workers are to be successful, we must meet their demands for books.

Very truly yours,

MILTANNA ROWE, *Librarian.*

University of Maryland

COLLEGE PARK

APPOINTMENTS AND RESIGNATIONS SINCE JANUARY 1, 1920

ADMINISTRATION.

Appointments

<i>Name</i>	<i>Title</i>	<i>Date</i>
Grace Sheldon.....	Senior Account Clerk.....	June 17, 1920
B. D. Sabourin.....	Stenographer.....	Mar. 23, 1920
L. M. Hill.....	Stenographer-Secretary.....	May 16, 1921
Jessie O'Neal.....	Principal Account Clerk.....	Nov. 6, 1920
O. D. Howell.....	Clerk of the Works.....	May 2, 1921
Dorothy D. Sewall....	Principal Account Clerk.....	Mar. 28, 1921
Mary R. Graybill.....	Senior Stenographer.....	May 16, 1921
Elsie Galloway.....	Senior Account Clerk.....	July 25, 1921

Resignations

Mabel Reese.....	Principal Account Clerk.....	May 1, 1920
B. D. Sabourin.....	Stenographer.....	July 15, 1920
Mrs. R. C. Towles.....	Stenographer.....	Mar. 31, 1921
Lillie M. Hill.....	Stenographer-Secretary.....	Sept. 30, 1921
Elsie Galloway.....	Senior Account Clerk.....	July 30, 1921
Alfred M. Shadick....	Principal Account Clerk.....	Feb. 28, 1921
L. A. Lindstrom.....	Principal Account Clerk.....	Oct. 30, 1920

COLLEGE OF AGRICULTURE

Appointments

R. W. Carpenter.....	Professor of Farm Equipment..	Sept. 20, 1920
H. A. Jones.....	Prof. of Vegetable Gardening..	July 1, 1920
J. B. Blandford.....	Horticultural Superintendent..	Mar. 15, 1920
Anna Dunkel.....	Stenographer-Secretary.....	June 19, 1920
H. W. Rickey.....	Associate Prof. of Pomology...	Oct. 1, 1920
Edith Beard.....	Senior Stenographer.....	Oct. 20, 1920
W E. Leer.....	Instructor in Agronomy.....	Jan. 1, 1921
Carleton Rutledge....	Instructor in Poultry Husb....	Feb. 1, 1921
Albert F. Vierheller..	Instructor in Horticulture....	Feb. 1, 1921
Vera I. Deckler.....	Stenographer-Secretary.....	May 1, 1921
C. E. Atkinson.....	Instructor in Tractor Scheel...	June 1, 1921
W. B. Kemp.....	Associate Prof. of Agronomy..	Sept. 15, 1921
W. J. Sando.....	Fellow in Agronomy.....	Oct. 1, 1920
W. E. Whitehouse....	Instructor in Pomology.....	Sept. 15, 1921
George Harrison, Jr..	Assistant in Apiculture.....	Oct. 1, 1921

Resignations

W. F. Newell.....	Horticultural Superintendent..	Jan. 31, 1920
R. Wellington.....	Prof. of Vegetable Gardening..	June 30, 1920
Marie Andrew.....	Stenographer-Secretary.....	May 31, 1920
Anna W. Dunkel.....	Stenographer-Secretary.....	April 30, 1921
H. W. Rickey.....	Associate Prof. of Pomology...	Sept. 31, 1921
John B. Wentz.....	Professor of Agronomy.....	Sept. 20, 1921
W. J. Sando.....	Fellow in Agronomy.....	July 31, 1921
C. E. Atkinson.....	Instructor in Tractor School...	Aug. 30, 1921
Carleton Rutledge....	Instructor in Poultry Husb....	Sept. 30, 1921

COLLEGE OF ARTS AND SCIENCES

Appointments

Dr. H. C. House.....	Prof. of English and Literature.	Sept.	10, 1920
Susan M. Harman....	Instructor in English.....	Oct.	1, 1920
Frank M. Lemon.....	Instructor in English.....	Oct.	1, 1920
B. L. Goodyear.....	Teacher of Voice.....	Oct.	1, 1920
A. D. Etienne.....	Assistant Chemist.....	June	15, 1920
A. F. Flenner.....	Assistant Chemist.....	Dec.	1, 1920
D. C. Lichtenwalner...	Assistant Chemist.....	Jan.	1, 1921
Edwin F. New.....	Instructor in Commercial Law.	Oct.	1, 1921
Milton Vogelgesang...	Feed Inspector.....	April	16, 1921
Mabel O. Wilcox.....	Instructor in Public Speaking..	Jan.	19, 1921
E. B. Starkey.....	Fellow in Chemistry.....	July	1, 1921
E. C. Donaldson.....	Fellow in Chemistry.....	July	1, 1921
Dr. A. H. Putney.....	Lecturer in Diplomacy.....	Sept.	19, 1921
Dr. F. Juchhoff.....	Professor of Accounting.....	Sept.	19, 1921
W. L. Harrison.....	Instructor in Business Admin..	Sept.	19, 1921
Dr. F. W. Collier.....	Lecturer in Sociology.....	Sept.	19, 1921

Resignations

C. F. Bletsch.....	Assistant Chemist.....	July	11, 1920
T. B. Leith.....	Assistant Chemist.....	Feb.	19, 1920
A. D. Etienne.....	Assistant Chemist.....	Dec.	15, 1920
Dr. P. I. Reed.....	Prof. of English and Literature.	Sept.	10, 1920
Charles L. Mullen.....	Laboratory Assistant.....	Sept.	30, 1921
Mabel O. Wilcox.....	Instructor in Public Speaking..	June	15, 1921

COLLEGE OF ENGINEERING

Appointments

Arthur Bielek.....	Instructor in Physics.....	Oct.	15, 1920
A. N. Johnson.....	Dean, and Director of Engi- neering Research.....	Oct.	1, 1920
C. G. Eichlin.....	Professor of Physics.....	Sept.	15, 1920
Estella Moore.....	Stenographer-Secretary.....	Oct.	1, 1920
Mrs. L. C. Whelpley...	Stenographer-Secretary.....	Oct.	13, 1920
Benjamin Berman....	Instructor in Math. & M. Eng..	Jan.	1, 1921
Alethea H. Stiles.....	Stenographer-Secretary.....	May	2, 1921
Margaret G. Engle...	Stenographer-Secretary.....	Aug.	15, 1921

Resignations

H. D. McMurtray.....	Asst. Professor of Physics.....	Sept.	15, 1920
Estella Moore.....	Stenographer-Secretary.....	Oct.	3, 1920
Arthur Bielek.....	Instructor in Physics.....	Dec.	31, 1920
Mrs. L. C. Whelpley...	Stenographer-Secretary.....	April	15, 1921
Aletha G. Stiles.....	Stenographer-Secretary.....	Aug.	15, 1921

ANIMAL INDUSTRY GROUP

Appointments

L. J. Poelma.....	Instructor in Physiology.....	June	1, 1920
A. S. Jones.....	Assistant in Bacteriology.....	June	15, 1920
Irving Gibson.....	Asst. Prof. of Dairy Husbandry.	Sept.	1, 1920
M. R. Young.....	Asst. in Dairy Husbandry.....	Oct.	1, 1920
G. O. Smith.....	Asst. Prof. of Animal Husb....	Dec.	1, 1920
Samuel H. Harvey....	Asst. Prof. of Dairy Husbandry.	Sept.	1, 1921
Elizabeth Pike.....	Junior Stenographer.....	June	18, 1921

Resignations

K. F. Menzel.....	Assistant in Bacteriology.....	June	10, 1920
C. C. Shivers.....	Asst. in Biological Laboratory..	Jan.	31, 1920
R. G. Trosper.....	Clerk.....	July	31, 1920
A. S. Jones.....	Assistant in Bacteriology.....	May	31, 1921
I. G. Gibson.....	Asst. Prof. of Dairy Husbandry.	Sept.	10, 1921

COLLEGE OF HOME ECONOMICS

Appointments

Mrs. Janet Thurston..	Instructor in Tex. and Clothing.	Jan.	5, 1920
Mrs. Lilian Wood.....	Senior Stenographer.....	Jan.	5, 1920
Mrs. Claribel Welsh..	Instructor in Foods & Cookery.	Sept.	1, 1920

Resignations

Mrs. Janet Thurston..	Instructor in Tex. and Clothing.	June	15, 1920
-----------------------	----------------------------------	------	----------

EXTENSION SERVICE

Appointments

K. G. Connolly.....	Chief Clerk.....	July	15, 1920
M. D. Bowers.....	Asst. in Agr'l Journalism.....	May	1, 1920
R. L. Post.....	County Agent, Howard Co.....	March	1, 1920
P. W. Moore.....	County Agent, Allegany Co....	April	19, 1920
R. F. McHenry.....	County Agent, Allegany Co....	Aug.	9, 1920
W. C. Thomas.....	County Agent, Caroline Co....	Jan.	1, 1920
W. C. Snarr.....	Asst. Co. Agent, Harford Co..	June	21, 1920
T. V. Dowing.....	Asst., Boys' Club Work.....	May	10, 1920
Eleanor Parker.....	Stenographer.....	Aug.	17, 1920
Ethel Joy.....	Home Dem. Agt., St Mary's Co.	July	1, 1920
Celeste Crippen.....	Home Dem. Agt., Dorches. Co..	July	1, 1920
Laura Henshaw.....	Home Dem. Agt., Garrett Co....	July	1, 1920
Rhea Morgan.....	Home Dem. Agt., Allegany Co..	March	1, 1920
G. H. Bedell.....	Specialist in Animal Husb....	Sept.	30, 1920
Audrey Moore.....	Junior Stenographer.....	Sept.	1, 1920
Emelia Lee.....	Senior Stenographer.....	Jan.	1, 1920
Elsie Lawson.....	Asst. Home Dem. Agt. Mont. Co.	Aug.	1, 1920
Mildred Jones.....	Junior Stenographer.....	Oct.	21, 1920
Imogene Gardner....	Home Dem. Agt., Charles Co....	Oct.	1, 1920
Edward E. McLean...	County Agent, Baltimore Co....	Nov.	1, 1920
R. A. Jehle.....	Extension Pathologist.....	Jan.	1, 1921
Mrs. M. C. Bell.....	District Home Dem. Agent.....	June	16, 1921
Albert S. Radebaugh..	County Agent, Cecil Co.....	Sept.	6, 1921
B. E. Carmichael....	Special in Animal Husbandry..	July	5, 1921
Helen Starkey.....	Junior Stenographer.....	July	16, 1921
Elizabeth V. Hodgson.	Home Dem. Agt., Q. A. Co....	Aug.	1, 1921
Susan S. Garberson...	Home Dem. Agt., Wash. Co....	July	1, 1921
Bertha Knight.....	District Home Dem. Agent.....	July	1, 1921
Mrs. E. S. Bohannon..	Home Dem. Agt., Charles Co....	Mar.	15, 1921
Clara Mullen.....	Home Dem. Agt., Wicomico Co.	Feb.	21, 1921
Mrs. Florence Jodzies.	Senior Stenographer.....	Sept.	22, 1921

Appointments

T. V. Dowing.....	Asst., Boys' Club Work.....	Aug.	31, 1920
T. L. Smith.....	County Agent, Washington Co.	Jan.	2, 1920
J. L. Fidler.....	County Agent, Howard Co.....	Jan.	2, 1920
F. A. Wirt.....	Farm Machinery Specialist....	Jan.	2, 1920

K. C. Cole.....	County Agent, Allegany Co....	Mar.	31, 1920
S. S. Buckley.....	Animal Industry Specialist....	April	30, 1920
T. E. McLaughlin....	District Agent.....	June	30, 1920
J. F. Davis.....	County Agent, Dorchester Co..	Aug.	6, 1920
Eleanor Parker.....	Stenographer.....	Aug.	21, 1920
Irene Phyllis Stamp..	Stenographer.....	June	15, 1920
Gwynneth Gminder...	County Agent, Baltimore Co...	June	30, 1920
Bertha Ide.....	Home Dem. Agt., Baltimore Co.	June	25, 1920
Mrs. N. C. Lawson....	Home Dem. Agt., Howard Co...	Mar.	13, 1920
Katherine Murrin....	Home Dem. Agt., St. Mary's Co.	April	1, 1920
Esther Wotring.....	Home Dem. Agt., Cecil Co....	July	31, 1920
J. F. Hudson.....	County Agent, Baltimore Co...	Sept.	30, 1920
Julia E. Etchison....	Home Dem. Agt., Charles Co...	Sept.	30, 1920
Elsie Lawson.....	Home Dem. Agt., Mont. Co....	Aug.	30, 1920
C. L. Opperman.....	Asst. in Agric'l Journalism....	Mar.	31, 1920
Ella Rhodes.....	Home Dem. Agt., Frederick Co.	Jan.	31, 1920
Frances G. Stuart....	Home Dem. Agt., Worcester Co.	June	30, 1920
Margaret Owens.....	Clerk.....	May	8, 1920
Emelia Lee.....	Stenographer.....	Oct.	31, 1920
Mabel E. Stephenson..	District Agent.....	Aug.	31, 1920
Margaret Schmidt...	District Agent.....	Dec.	31, 1920
Sue W. Frick.....	Home Dem. Agt., Wash. Co....	Mar.	5, 1921
J. H. Knode.....	County Agent, Cecil Co....	Mar.	15, 1921
Olive C. Mitchell....	Home Dem. Agt., Wicomico Co.	Dec.	31, 1920
G. H. Bedell.....	Specialist in Animal Husb....	Mar.	31, 1921
Mary L. Bryn.....	Home Dem. Agt., Q. A. Co....	April	16, 1921
Imogene Gardner....	Home Dem. Agt., Charles Co...	May	31, 1921
F. J. Van Hoesen....	County Agent, Montgomery Co.	Aug.	31, 1921
Irene Newman.....	Senior Stenographer.....	Aug.	8, 1921
Dorothy Ross.....	Home Dem. Agt., Cecil Co....	Sept.	30, 1921
Ola Day.....	District Agent.....	Sept.	30, 1921

EXPERIMENT STATION

Appointments

W. N. Ezekiel.....	Asst. Plant Pathologist.....	July	1, 1920
C. C. Hamilton.....	Asst. Entomologist.....	April	6, 1920
G. Eppley.....	Assistant Agronomist.....	April	1, 1920
J. R. Haag.....	Assistant in Soils.....	Mar.	15, 1920
H. B. Winant.....	Assistant in Soils.....	Jan.	1, 1920
Marion B. Johnson...	Assistant in Seed Laboratory..	Feb.	1, 1921
C. M. Conrad.....	Research Asst. in Plant Physiol.	July	1, 1921
J. L. Martin.....	Assistant in Soils.....	July	1, 1921
R. L. Sellman.....	Assistant Agronomist.....	April	15, 1921
P. I. Long.....	Assistant Poultryman.....	Oct.	1, 1921
Howard Alexander...	Research Asst. in Agronomy...	Oct.	1, 1921
A. Lee Schrader.....	Assistant Pomologist.....	Oct.	1, 1921
William Mather.....	Assistant in Soils.....	Sept.	15, 1921
C. P. Wilhelm.....	Assistant in Soils.....	July	1, 1921

Resignations

R. C. Towles.....	Asst. in Animal Husbandry....	Feb.	15, 1921
E. H. Parfitt.....	Asst. in Plant Physiology.....	April	15, 1920
C. C. Chen.....	Asst. in Plant Physiology.....	Feb.	15, 1921
C. B. Nickels.....	Assistant Entomologist.....	May	31, 1920
Clara Hodgins.....	Assistant in Seed Laboratory..	Nov.	30, 1920
J. R. Haag.....	Assistant in Soils.....	Feb.	15, 1921
G. Eppley.....	Assistant Agronomist.....	April	30, 1921
G. R. Stuntz.....	Assistant Agronomist.....	April	15, 1921
J. P. Jones.....	Asst. in Plant Physiology.....	Aug.	15, 1921
Erston V. Miller....	Asst. in Plant Physiology.....	June	30, 1921

MILITARY DEPARTMENT

Appointments

Major A. T. Dalton...	Asst. Prof. Military Science...	April	9, 1921
Capt. J. S. Dougherty...	Asst. Prof. Military Science...	July	1, 1921
Capt. John W. Stanley...	Asst. Prof. Military Science...	Sept.	30, 1921
Capt. Henning Linden...	Asst. Prof. Military Science...	Sept.	30, 1921
Sgt. E. Ferguson....	Instructor in Military Science...	May	27, 1920
Sgt. W. H. Simmons.	Instructor in Military Science...	June	17, 1920

Resignations

Major A. T. Dalton...	Asst. Prof. Military Science...	Sept.	15, 1921
-----------------------	---------------------------------	-------	----------

SUMMER SCHOOL (June 23 to August 1, 1920, only)

Appointments

Miss Adele Stamp....	Instructor.....	June	23, 1920
Edward F. Webb.....	Instructor.....	June	23, 1920
M. Annie Grace.....	Instructor.....	June	23, 1920
Kate Kelly.....	Instructor.....	June	23, 1920
Elizabeth I. Murphy..	Instructor.....	June	23, 1920

SUMMER SCHOOL (June 20 to July 29, 1921, only)

Appointments

Edyth Gorsuch.....	Instructor.....	June	20, 1921
Cornelia Whitney....	Instructor.....	June	20, 1921
Huldah Brust.....	Instructor.....	June	20, 1921
Adele Stamp.....	Instructor.....	June	20, 1921
Mamie McLees.....	Instructor.....	June	20, 1921
Margaret McLean....	Instructor.....	June	20, 1921
Helen R. Houck.....	Instructor.....	June	20, 1921
Wm. K. Klingaman...	Instructor.....	June	20, 1921
Annie M. Shapard...	Instructor.....	June	20, 1921
Caroline L. Ziegler...	Instructor.....	June	20, 1921
Eugene S. Burroughs.	Instructor.....	June	20, 1921

PURCHASING DEPARTMENT AND MAIL SERVICE

Appointments

John R. Risdon.....	Printer.....	Dec.	15, 1920
Mary Fluhrer.....	Assistant in Printing.....	Dec.	15, 1920
Ernest Gelinas.....	Messenger.....	April	11, 1921
H. C. Hopper.....	Messenger.....	Aug.	10, 1920
D. W. Ferguson.....	Messenger.....	Dec.	13, 1920
E. V. Flautt.....	Ordinance Clerk.....	March	1, 1920

Resignations

D. W. Ferguson.....	Messenger.....	April	10, 1921
H. C. Hopper.....	Messenger.....	Dec.	11, 1920

GENERAL SERVICE DEPARTMENT

Appointments

Elva Bittner.....	Stenographer-Secretary.....	Sept.	24, 1920
J. R. Drawbaugh.....	Superintendent of Janitors.....	June	15, 1920
J. F. Jenkins.....	Watchman.....	Sept.	8, 1920
H. E. Clarkson.....	Plumber.....	Aug.	1, 1920
C. L. Mackert.....	Superintendent of Janitors.....	Oct.	1, 1921
E. K. Morgan.....	Superintendent of Janitors.....	May	1, 1920

Resignations

Truman Hepting.....	Clerk.....	May	15, 1920
E. H. Bennett.....	Clerk.....	April	30, 1920
M. M. Brunck.....	Clerk.....	Sept	30, 1920
J. R. Drawbaugh.....	Superintendent of Janitors.....	April	30, 1921
Vivian Lake.....	Chief Engineer.....	Aug.	31, 1921
E. K. Morgan.....	Superintendent of Janitors.....	Sept.	30, 1921

FEDERAL BOARD FOR VOCATIONAL EDUCATION (Now U. S. Veterans' Bureau)

Appointments

Mrs. E. B. New.....	Instructor in English.....	April	1, 1921
---------------------	----------------------------	-------	---------

UNIVERSITY OF MARYLAND

College Park

TRANSFERS SINCE JANUARY 1, 1920

<i>Name</i>	<i>Title</i>	<i>From</i>	<i>To</i>	<i>Effective</i>
S. E. Day.....	County Agent.....	College Park.....	Washington County...	February 26, 1920.
P. W. Moore.....	County Agent.....	Allegany County.....	Dorchester County....	August 16, 1920.
W. C. Snarr.....	County Agent.....	Harford County.....	Cecil County.....	March 15, 1921.
W. C. Snarr.....	County Agent.....	Cecil County.....	Montgomery County...	October 1, 1921.
G. R. Stuntz.....	Asst. County Agent...	Experiment Station...	Harford County.....	April 15, 1921.
Mrs. R. C. Towles....	Stenographer.....	Extension Division....	Administration.....	August 15, 1920.
Winifred E. Gahan...	Typist.....	Animal Industry.....	Extension Division....	May 6, 1921.
Helen Wooster.....	Typist.....	Extension Division....	Animal Industry.....	May 6, 1921.

State Board of Agriculture

*The President of the University,
College Park, Md.*

While the State Board of Agriculture under the law is charged in one way or another with almost the entire responsibility for the development of agriculture, its main efforts during the last biennium have been centered in animal diseases, especially bovine tuberculosis and hog cholera. And one of the main developments in connection with eradication of these diseases has been the work of the Live Stock Sanitary and Biological Laboratories.

The bovine tuberculosis eradication work has been carried on in co-operation with the Bureau of Animal Industry of the United States Department of Agriculture under a special Act of Congress. The losses caused by this disease to cattle, especially dairy catt'e, and the dangers resulting from the use of raw milk from tubercular animals, make it highly important that the work of eradication be vigorously carried out.

Governor Ritchie has recognized the extreme value of this work by recommending for the next two years more than double the amounts which were available last year. The progress of the work so far has been extremely satisfactory. It is now being accomplished with the co-operation of the Federal Government at about one-third what it would cost the State to do it alone. In order to secure the continued co-operation and allotment of funds for this work from the Federal Government it was necessary to secure from State sources an advance of approximately \$50,000 for the two years, 1921-22. This was arranged with the co-operation of Governor Ritchie and John M. Denis, State Treasurer.

The work of hog cholera eradication has been especially well organized and is much appreciated by the farmers. This also is in co-operation with the Federal Government. Efforts have been made so to organize the work that the farmers, through better care and feeding, greater cleanliness and disinfection, quarantine and sanitary control, would accomplish the end desired rather than by the unrestricted use of the double treatment or of serum only. This situation is treated at length under the special report of this department.

The live stock and live stock products business in Maryland is capable of almost infinite development. The work of the State Board of Agriculture which has to do with this phase of the State's agricultural resources is handled in co-operation by the State Board and the

animal industry group of the College of Agriculture of the University. This includes, of course, work in extension and research.

Under the law, the State Board of Agriculture is authorized to encourage immigration. Considerable has been done along this line through the Extension Service. Instead of trying to create a new organization for this purpose, the State Board has found it economical and advisable to use the machinery of the extension organization of the University. In encouraging immigration, so far as funds would permit, the natural advantages of the State have been made known outside its borders and farmers of other States who desire to settle in this general section have been reached personally. These things have been accomplished through material furnished the press of this and other States, through representation of the University and State Board at conventions or meetings outside the State, and through official publications relating to the State's industries. One special pamphlet, "What Maryland Offers," was sent broadcast. Requests for information from all sections are becoming very frequent, which shows that the campaign is bearing fruit.

The State Board, through its own or through representatives of the University, is co-operating in the establishment of organizations to increase market facilities and to study the ways and means for bettering them. The Maryland State Dairymen's Association is a good example of these organizations. The problem of marketing products is the greatest that faces the farmer today. It is useless to attempt to stimulate production and not at the same time show the farmer how to distribute his product to the best possible advantage.

Most of the control work which has to do with field crops and fruits, relating mainly to insect pests, is handled under the law of 1898, which created a Department of Horticulture for this specific purpose. The Board has continued to allow this work to be directed through the University Extension Service, as its organization for this purpose has been extremely effective.

While the State Board of Agriculture is organized mainly as a control and regulatory body, it has adopted a policy of control and regulation by education which has been very effective. In fact it is exceedingly doubtful if, with its meager means for actual enforcement, the board could have accomplished anywhere near as much as it has if its policy had been one solely of enforcement rather than education. The present organization of the board, which gives it the opportunity to co-operate so closely with the University and to use the machinery of the University, is in the main the reason the board has been able to function so effectively.

Live Stock Sanitary Section

*The Executive Officer,
State Board of Agriculture,
Baltimore, Md.*

Sir: In summarizing the work of the Live Stock Sanitary Section for the biennium ending September 30, 1921, a decrease has been found in the number of outbreaks of infectious diseases reported to this office. At no time has there been any apparent danger of an epidemic of any of the infectious diseases of animals. Losses from hog cholera have been greatly reduced, as shown in the report of the inspector in charge of hog cholera control, and as also shown in the report of the Biological Laboratory of the much smaller amount of hog cholera serum distributed throughout the State. The reports of the inspector in charge of hog cholera control and of Dr. Pickens, in charge of the Live Stock Sanitary and Biological Laboratories, are appended to this summary.

The co-operative agreements between the State and the Federal Bureau of Animal Industry in both hog cholera and tuberculosis eradication have been carried on without interruption, with the exception of short periods, when funds were not available to pay indemnities for tuberculous cattle slaughtered under the accredited herd plan. While the carrying out of these two projects has been most strongly emphasized during the past two years, no effort has been spared to look after the other infectious diseases or suspected cases in order to prevent the spread of infection among the domestic animals. Tuberculosis eradication has been the foremost project throughout the United States, and we have devoted a large percentage of our efforts and financial resources to this project. The demand for this work has now become so great that it seems wise to devote more time and money to tuberculosis eradication, and in order to make it more effective and to economize both energy and funds to take up more extensively the cleaning up of definite areas before going on to new territory.

As far as funds would permit, the work has been advanced, and, while progress has been made and very satisfactory results obtained, the work has been held back by lack of funds for the payment of claims for indemnities for tubercular animals slaughtered. Farmers and dairymen are greatly interested in the eradication of tuberculosis from their herds, and in the dairying counties the requests for tuberculin tests have increased so rapidly we have not been able, with our

limited facilities, to meet the demand. With a reasonable expenditure satisfactory results in the control and ultimate eradication of this disease can be expected.

Tables are given to show the amounts expended for indemnities by the State from October 15, 1918, when the work was started, up to October 1, 1921, and the number of cattle tested under the co-operative plan and by private practitioners and State officials at the public stock yards during the fiscal years of 1920 and 1921. (No indemnities are paid on tubercular animals found in tests made by private practitioners or at public stock yards). The tables:

MARYLAND STATE BOARD OF AGRICULTURE
 Live Stock Sanitary Section
 PAYMENT OF INDEMNITIES BY STATE
 From Oct. 15, 1918, to Oct. 1, 1921

Date	Reactors Slaughtered	Amount Paid	
Sept.-Oct., 1919.....	187	\$3,825.71	Paid from budget balances, 1918-1919.
Dec., 1918-July, 1920....	522	10,063.31	Paid from Md. Council of Defense Fund.
Sept., 1920.....	290	5,267.99	Paid from budget balances, 1919-1920.
Oct., 1920-Jan., 1921....	502	8,996.02	Paid from appropriation, 1920-1921.
April-Sept., 1921.....	1,134	24,999.99	Paid from Union Trust Company Fund.
Sept., 1921.....	422	9,811.92	Paid from budget balances, 1920-1921.
Total.....	3,057	\$63,964.94	

Fiscal Year Ending September 30, 1920

	Tested	Passed	Reacted	Suspicious
Cattle tuberculin tested by Maryland veterinarians as reported to the Maryland State Board of Agriculture.....	6,484	5,933	515	36
Tuberculin tested by State officials at Union Stock Yards....	671	661	10	
Tuberculin tested by State officials and the United States Bureau of Animal Industry, under the co-operative plan for tuberculosis eradication.....	9,576	9,048	378	150
Totals.....	16,731	15,642	903	186

Fiscal Year Ending September 30, 1921

Cattle tuberculin tested by Maryland veterinarians as reported to the Maryland State Board of Agriculture.....	6,387	5,832	502	53
Tuberculin tested by State officials at Union Stock Yards....	928	914	14	
Tuberculin tested by State officials and the United States Bureau of Animal Industry, under the co-operative plan for tuberculosis eradication.....	25,388	22,929	2,234	225
Totals.....	32,703	29,675	2,750	278

Under the Federal and State co-operative plan for tuberculosis eradication we now have in Maryland 299 accredited herds, or herds found upon two annual or three semi-annual tests to be free from tuberculosis and 1,038 herds once tested and found free from tuberculosis. In all we have 1,704 herds under supervision, with about 450 on the waiting list.

In our budget to be submitted to the Governor and General Assembly we are including a request for an appropriation for dairy inspection, as developments in the past two years have made it seem absolutely necessary that an adequate plan for inspection should be adopted and carried out by this department. Some of the cities and incorporated towns in the State have passed ordinances requiring a tuberculin test of herds from which their milk supply is obtained; and as it is quite as important to see that milk is produced and handled under sanitary conditions as to know that it comes from cows free from tuberculosis, regular inspection of dairy farms should be made. By doing this work in connection with tuberculosis eradication it can be handled in a practical way with less expense.

Details as to investigations are kept on file and records of herds and individual animals are at all times available. Many of the local veterinarians in the counties have aided the department by reporting cases promptly, and inspectors from this office have been sent when possible to render them assistance. It is interesting to note that by a careful analysis of this report it will be seen that the amount of money appropriated by the State for the work of this department has been returned many times over to the live stock owners in reduced losses from infectious diseases among the domestic animals. Reduced losses from hog cholera alone amount to more than a quarter of a million dollars per year, and incidentally the State has advanced in hog population per square mile from ninth place to seventh in the Union. It obviously would be more difficult to reduce to figures the

beneficial effects of the tuberculosis eradication work. Suffice it to say that the consensus of opinion throughout the United States is that cows from accredited herds are worth from twenty-five to forty dollars more per head on the open market than cows from unknown sources. With an appropriation to enable us to employ more full-time inspectors, the department can be made more efficient and the service improved.

Respectfully submitted,

R. C. REED, *Chief.*

Hog Cholera Eradication

*The Executive Officer,
State Board of Agriculture,
Baltimore, Md.*

Sir: I have the honor to submit the following report on the hog cholera work in the State of Maryland for the period ending September 30th 1921.

This work is carried on as a co-operative measure, the co-operating authorities being the Live Stock Sanitary Section of the State Board of Agriculture, the Extension Service of the University of Maryland, and the Bureau of Animal Industry of the United States Department of Agriculture.

The work is conducted under what is known as the "Maryland Plan for the Control and Eradication of Hog Cholera." The plan in question is undoubtedly different from that employed in any other State, and has now been on trial practically five years. Officials in the Washington office of the United States Bureau of Animal Industry have spoken and written very complimentary of the results that are being obtained under this plan in preventing the spread of the infection from the premises on which it existed at the time the outbreaks were reported. Reports from conferences of national character have shown that the tendency of sanitarians in other States is to adopt more and more each year the essentials employed in the Maryland plan.

The Maryland plan for the control of hog cholera is founded on the principle of preventing the introduction, harboring and spread of the infection. There are no restrictions involved that prevent any person from taking such precautions as he may deem necessary for the protection of his swine, so long as such measures are used in accordance with the rules and regulations of the State Board of Agriculture. Neither does the plan call for any expenditure of money on the part of the swine raisers in carrying out the recommendations made to prevent the introduction or spread of the infection. So far, observance of the rules and regulations on the part of the farmers have only been voluntary. The farmers, as a whole, are giving their approval to the work and the time is rapidly approaching when they will demand that official action be taken in the matters of quarantine, supervision of cleaning and disinfection, etc.

Before considering recommendations regarding future legislation and possible change in minor details of the plan it might be well to make some comparisons regarding swine losses before and after the

work was established, as well as presenting other data that might be of interest and value.

For the five-year period preceding the inauguration of the work the average annual swine loss in the State of Maryland was 79 per thousand.

Since the inauguration of the work and for practically the same length of time the average annual loss has been 45 per thousand.

The average annual number of hogs in the State since the inauguration of the work has been 514,000.

By the reduction in the loss from 79 to 45 hogs per thousand an average annual saving of 17,175 hogs, or a total of 85,875 for the 5-year period, has been accomplished.

Since the inauguration of the work in Maryland the average annual value of hogs has been \$16 per head. This would mean that the saving in dollars and cents has been approximately \$274,805 annually, or \$1,374,025 for the 5-year period.

Since the hog cholera work has been inaugurated in this State Maryland has advanced to seventh place in the number of hogs per square mile, being exceeded only by Iowa, Indiana, Ohio, Illinois, Missouri and Georgia. In the meantime the hog losses have been reduced, as stated before, from the annual average of 79 to 45 per thousand.

The cost of the work for the last biennium was approximately \$28,000 paid by the Government and the State on a fifty-fifty basis.

Four veterinarians assigned by the United States Bureau of Animal Industry gave their entire time to the work, and the following is a summary of their activities for the biennium just closed:

Number of meetings held.....	53
Number of attendance.....	4,149
Number of demonstrations.....	56
Number in attendance at demonstrations.....	1,098
Number of hog cholera warning cards sent out.....	24,500
Number of farmers visited.....	5,239
Number of persons interviewed, giving warning of outbreaks, instructions, etc.....	11,425
Number of miles traveled.....	74,717

During the two-year period ending September 30, 1921, outbreaks of hog cholera were reported on 1,023 premises.

TABLE SHOWING OUTBREAKS BY MONTH

	1919	1920	1921
January	23	11
February	7	19
March	10	10

April	.....	19	20
May	.....	32	11
June	.....	21	13
July	.....	23	18
August	.....	51	61
September	.....	130	69
October	107	146	....
November	38	120	....
December	32	32	....
	<hr/>	<hr/>	<hr/>
	177	614	232

TABLE SHOWING OUTBREAKS BY COUNTIES

Anne Arundel	37
Allegany	30
Baltimore	31
Calvert	14
Caroline	1
Carroll	40
Cecil	57
Charles	15
Dorchester	77
Frederick	70
Garrett	0
Harford	29
Howard	17
Kent	16
Montgomery	37
Prince George's.....	56
Queen Anne's.....	21
St. Mary's.....	21
Somerset	39
Talbot	58
Washington	235
Wicomico	68
Worcester	54
Total.....	<hr/> 1,023

In so far as "hog cholera control" is concerned, we believe the results obtained in Maryland since the inauguration of the work have proved that this goal is already being reached. However, with an annual average loss reaching approximately \$274,805.00, should we be content with the results obtained and make no effort to further reduce this mortality? We believe not. It is our opinion that the time has come when the term "hog cholera control" should be dropped and

"hog cholera prevention substituted. It is conceded as a fact that an outbreak of hog cholera cannot occur without the presence of the living organism responsible for it, and that this organism does not originate spontaneously, nor will it be transmitted through the air. Therefore, if care is taken to prevent the introduction of the infection to susceptible herds, primary outbreaks will not occur, there can be no spread of the disease, and if the proper steps are taken to free infected premises of the causative agent, then hog cholera eradication will have become an accomplished fact. On the other hand, if we continue along the lines of hog cholera control, which is generally construed to mean the prevention of the spread of the infection from primary outbreaks, we will undoubtedly be temporizing with the disease, unsatisfactory losses will continue to be sustained and nothing will be gained toward the elimination of the infection.

Experience gained from the hog cholera work in Maryland brings out four points which we believe should be given special consideration—two relating to the cause of new or primary outbreaks and two to the spread of the infection to herds in the immediate locality, or secondary outbreaks.

The causes which have been proved largely responsible for new outbreaks of the disease in free localities are feeding unsterilized garbage or table refuse and the introduction of new stock. Those which have undoubtedly been primarily responsible for the spread of the infection to other herds in the locality are failure to report outbreaks of the disease and to properly dispose of carcasses of hogs that have died of the malady.

Since the observance of the rules and regulations for the control of contagious and infectious diseases, as well as the precautionary measures recommended, has been entirely voluntary on the part of the farmers and stock raisers, there is much evidence that a certain per cent. of them continue to ignore the advice given, and in some instances do much to nullify the plans made for the protection of their herds. Co-operation on the part of such persons can never be expected, and so long as they are permitted to disregard the sanitary measures recommended, the matter of controlling hog cholera will always be a serious problem and prevention of the disease out of the question.

The feeding of uncooked garbage or table refuse is undoubtedly responsible for more than 80 per cent. of the new outbreaks, and that drastic action is demanded in regard to this practice goes without saying. If it is possible to do so, the feeding of all garbage other than that made on the immediate premises should be stopped unless the product is sterilized by cooking. This may be impossible, and it may be necessary to work out some other plan of control for the feeding of this product. However, the practice is inconsistent with sanitation, and so long as it is permitted we can expect to make but little headway in our fight against hog cholera. In the cases of State

institutions where the garbage is disposed of by being fed to hogs, it is recommended that the State Board of Agriculture issue a regulation requiring the product to be sterilized before being fed. The families who dispose of their table refuse by feeding it to a few hogs kept in the back yard should be warned of the dangers incurred by feeding the product uncooked, especially when it might contain scraps of pork.

The introduction of new stock is another factor responsible for many outbreaks of the disease. We believe it can be more easily controlled and much will be gained in regulating this practice by starting free area work, which will be discussed later.

The greatest factor in the spread of the disease, once a new center of infection has been started, is the failure on the part of swine raisers to report sickness among their hogs. This has been a great handicap in the work and has resulted in serious spreading of the disease, causing extensive losses. On the other hand, when an outbreak of hog cholera has been promptly reported, there has not been the slightest trouble experienced in stopping the spread of the infection. Many reasons are advanced for this neglect, or refusal, to make such reports. However, we believe that regulations should be issued or a law requested by the State Board of Agriculture, making it obligatory for all persons to report sickness among swine that belong or are cared for by them.

The matter of properly disposing of the carcasses of swine that die of hog cholera is one in which much improvement has been made. However, there are many who yet fail to comply with this law. We believe the protection given buzzards has much to do with this unsatisfactory condition. It is known that buzzards very readily dispose of the carcasses and, regardless of the danger to other localities, the incentive to take advantage of this aid is undoubtedly great. If the protection of buzzards were removed and even a bounty offered for their slaughter, it would result in a large decrease in their number and, we believe, would result in farmers and others more promptly disposing of carcasses of animals that die on their premises.

Regarding the use of the double treatment, we believe that the restrictions placed on same by the State laws and regulations by the State Board of Agriculture are proving a great protection to the swine industry of this State and are meeting with the approval of the swine growers at large. There have been some outbreaks of hog cholera following its use, but the provisions of the law which require the keeping of such animals under quarantine have prevented the spread of the infection. The provision of the law preventing the administration of the virus by others than qualified veterinarians has undoubtedly prevented the number of outbreaks from being much larger. Objections to the enforcement of these rules and regulations are voiced by so few that they are practically nil. The United States Live Stock Sanitary Association, an organization of national scope

and composed of Government, State and college officials, as well as representatives of the live stock organizations and breeders of live stock, has gone on record against the unrestricted use of hog cholera virus. Officials of other States each year are realizing more and more the dangers of the promiscuous use of the double treatment, and many States have already taken action along the line laid down in the Maryland law.

It is recognized as impossible at this time to attempt eradication from the entire State. However, we believe the time is rapidly approaching when it should be attempted in limited and selected areas. If it proves a success in limited territories the districts could then be enlarged until the entire State would be included. To attempt such work only districts should be selected which we believe are ready for the plan and where we can be given assurance that at least 60 per cent. of the citizens will aid us in the work. Such territory would be put under special quarantine and the laws and regulations of the State Board of Agriculture would be applied and enforced to the letter.

Very respectfully,

J. K. ATHERTON, *Inspector in Charge.*

The Live Stock Sanitary and Biological Laboratories

*The Executive Officer,
State Board of Agriculture,
Baltimore, Md.*

Sir: I herewith submit the following report for the Live Stock Sanitary and the Biological Laboratories. This will also include unfinished projects as well as some of those which we contemplate starting within the next year. Some of the more important needs of the laboratories are enumerated, a few of which I believe are imperative and others which would greatly facilitate the work.

The hog cholera and serum experiments, the manufacture and distribution of the biologics as well as the sale of syringes, thermometers and disinfectant are biological. The laboratory diagnoses, the field investigation trips and part of the research work properly fall under the Live Stock Sanitary Laboratory.

The Laboratory Staff has supplied both medicinal and surgical care for the animals belonging to the College and Experiment Station for the past two years. Numerous professional visits have been made to many of the farms in the immediate vicinity of the University. The laboratories have taken over the water analyses for the University water system and are making routine weekly examinations. As may be noted in the tabulation of laboratory diagnoses, we have also examined and reported upon some fifty-four samples of water sent to the laboratory by private individuals.

Another important duty which has been added during the past two years is the routine bacteriological examination of the milk produced by the Experiment Station herd. This, we believe, is of great value to both consumers of the milk and the dairy people who are producing it. If we again refer to the tabulation of diagnoses, we find that numerous milk samples have been sent to the laboratories from private individuals for examination.

On October 1st our Laboratory Staff consisted of Dr. C. C. Shivers, who was assigned to the Biological Laboratory; Mr. K. F. Menzel, student assistant, who divided his available time between the Bacteriological, Biological and the Live Stock Sanitary Laboratories.

This force was continued without change until February 1st, when Dr. C. C. Shivers resigned to go into private practice. This position was left vacant until June 1st, when Dr. L. J. Poelma reported for duty. On June 15th Mr. Menzel resigned to accept a position as milk

tester with County Agent Derrick, of Harford county. Mr. A. S. Jones, a recent graduate of this institution in agriculture, was immediately appointed to take Mr. Menzel's place. No other changes have occurred.

On September 1, 1921, Mr. Jones resigned his position to accept one in Washington, D. C. Mr. L. Z. Foutz was then appointed to the position thus made vacant. No other changes have occurred.

During the year we have been able to purchase quite a number of very badly needed pieces of apparatus, together with a fair stock of laboratory supplies, such as glassware, chemicals, etc. The more important pieces of apparatus include a high-pressure boiler for furnishing steam to the sterilizers and equipping the laboratory with steam; an instrument sterilizer; acid pump; carboy stand; mechanical stages, etc. The laboratory supplies include flasks, specimen jars, chemicals, bandages, adhesive tape and such instruments as knives, forceps, needle-holders, etc. We have also been able to subscribe to several of the most important scientific journals in our field. This is proving of an immense help to us.

Again, we have added several substantial pieces of apparatus to our equipment, the more important of which was a 20° incubator, a freezing microtome, several 2-mm. objectives to finish equipping our microscopes, and a Jackson turbidometer. The glassware and chemicals used up during the previous year were also replaced.

A bulletin entitled "Rural School Sanitation" has been written. It was printed as an official publication of the College, Vol. 16, No. 4, September, 1919. An article entitled "A Disease of Cattle Due to Crab Grass" (*Digitaria Sanguinalis*) was also written, in which Dr. Welsh and Dr. Shivers appear as junior authors. This was published in the Cornell Veterinarian, Vol. 10, No. 1, January, 1920, page 8. Another article entitled "A Case of Mitral Thrombosis in the Heart of a Cow" was also written with Doctors Welsh and Shivers as junior authors. This appeared in the above-mentioned number of the same journal. The same number of this journal contained a review of the book, "The Newer Knowledge of Nutrition," by E. V. McCollen. Another review of the book entitled "A Text Book of General Bacteriology," by E. O. Jordan, was published in this issue of the above journal. Still a third book review was published on the "Diseases of Domesticated Birds," by Ward and Gallagher. It appeared in Vol. 10, No. 2, April, 1920. Another article, "Black Leg in an Aged Cow," appeared in the last number of this journal. The last article of the year was published in the Maryland Farmer in installments. It was entitled "The Maryland Plan for the Eradication of Hog Cholera" and was written in collaboration with Dr. Reed and Dr. Atherton.

Two articles of importance were published. The first was a preliminary report on our Hog Cholera Experiment No. 2. It gave the date which had been obtained up to August, 1920. This consisted, briefly stated, in the study of the susceptibility of young pigs to hog

cholera. The paper was read before the American Veterinary Medical Association meeting at Columbus, Ohio, in September, 1920. It was published in the official journal of the association, Vol. lviii, No. 4, page 403.

The other article was entitled "Gout in Poultry." It was written with the idea of conveying some of the author's experiences with a rare disease of poultry. Its greatest importance lies in the lessons which may be learned from it and applied to human medicine. It was published in the Cornell Veterinarian, Vol. xi, No. 3, page 180.

A book review of Russell and Hastings' Agricultural Bacteriology was also published in the same number of the above journal, page 223.

A careful study of gout in geese has been made and an article prepared on the subject. It is in the hands of the publisher and will appear in an early issue of a scientific periodical. A study extending over several years has also been made of the above condition in poultry. An article on this subject is at present being written. A project to determine the best time to immunize pigs is being carried out as fast as space and materials will warrant. This is a long-time experiment, and it is hardly safe to draw deductions at this time. However, it may be stated that if results continue to check with those already obtained, it will be of even greater value to hog raisers than was even at first anticipated.

Another project on the susceptibility of young pigs to cholera is in progress. Work is being done on *Bacillus Pyocyaneus* and also Black Leg. A sterile anti-hog cholera serum has been produced, but we are unable to simplify the technique sufficiently to make the procedure practical on a large scale.

Two projects on hog cholera are still being prosecuted as vigorously as our facilities will permit. As these experiments require observations on a large number of animals, it is probable that at least three more years will have passed before we will be warranted in drawing our final conclusions. It is believed, however, that by next spring we will have collected enough data to justify the publication of a preliminary report on the duration of the immunity produced by the simultaneous treatment of pigs vaccinated at different ages.

The work on *Bacillus Pyocyaneus* is progressing very slowly, as it seems almost impossible to find sufficient time for the work involved. It is hoped, however, that this may be drawn to a close within the next two or three months.

Considerable work has been done and more is in progress on testing out an ozoning machine. The instrument produces ozone by electricity. It is very highly recommended as an auxiliary in ventilation, especially in schoolrooms. It is impossible at this time to draw definite conclusions as to the value of the machine.

One of the greatest needs of the Animal Industry interests today is more knowledge of the contagious abortion disease in cattle. I

believe this great problem can best be solved by assigning certain institutions special phases of the work for their investigation. Then at the completion of the project to arrange the facts in their proper sequence. In a recent hearing before the National Research Council the possibilities of this method of procedure were discussed. There are, however, some rather large gaps and important inaccuracies in our present basic knowledge of the subject. It therefore seems to me and to other investigators with whom I have talked that we should first confirm the present knowledge. Along this line the first logical step would seem to be to make as nearly as possible an exhaustive study of the causative organism of the disease, viz., B—Abortus Bang. The findings should then be published in a monograph. This work should be undertaken here if possible. We have practically all of the equipment necessary. We would require two things, however, which make the work impossible at the present time. We should have a man who could devote his entire time to the work. We should also have to be in a position to maintain five or six experimental cows.

There are several other smaller projects which we expect to start during the year.

The laboratory diagnosis work has grown enormously the past year. This, together with several new projects undertaken for the assistance of the farmers of the State, make our present laboratory force entirely too small. If the growth continues we will soon have to have another full-time man or give up some of our activities. The scope of this work may be judged by the fact that 361 specimens have been examined at this laboratory during the past year. The following diseases and conditions have been encountered and diagnosed: Stomach Worms (sheep), Hog Cholera, Water Analyses, Influenza (horses), Septicaemia Hemorrhagica (colts), Arsenical Poisoning (horses and cattle), Malignant Oedema (hogs), Rabies (dogs, cows, mules and cats), Necroferus Infection (hogs, cattle and sheep), Acute Indigestion (cattle), Impaction (cattle), Improper Diet (cattle, hogs, dogs, horses), Puerpura Hemorrhagica (horses), Tuberculosis (cattle, hogs, hens), Streptococci Mastitis (cattle), Coccidiosis (hens), Egg Bound (hens), Pseudo Leukemia (canary bird), Prolapse Vent (fowl), Mange (hogs, cattle, horses and mules), Nodular Disease (sheep), Lead Poisoning (cattle and sheep), Ulcerative Gastritis (hogs), White Scours (calves), Leg Weakness (fowls), Gout (geese and hens), Chicken Pox (fowls), Roup (fowls), Acute Hemorrhagic Gastritis (dog), Broken Leg (dog), Entitis (canary bird), Chorea (dog), Urine Analyses (man), Oid (sheep), Carcinoma (dog and guinea pig), Bacillary White Diarrhoea (poultry), Ententitis (calf), Gonorrhoea (man), Black Leg (cattle), Castration (pigs), Rheumatism (cat), Cholera (poultry), Acne (man), Round Worms (hogs), Contagious Abortion (cattle), Otiorrhoea (rabbits), and examination of milk for cleanliness.

1920-1921—The laboratory diagnosis has continued to increase, as may be noted by an examination of the following tabulation. The

investigation showed the presence of a rather wide range of both infectious and non-infectious diseases of practically all of the common species of our domesticated animals. The growing demand for this service by the people of the State has made it essential that we increase our staff or practically eliminate all of our research. This should be prevented if there is any possible means of doing so.

A detailed discussion of the following tabulation is omitted for the purpose of conserving space in this report.

LABORATORY DIAGNOSES

October 1, 1920, to September 30, 1921

<i>Materials, Tissues or Animals Examined</i>	<i>No.</i>	<i>Disease Suspected</i>	<i>Diagnosis</i>
Cow.....		Died after extreme emaciation.....	Abscess of liver.
Cow.....		Indigestion.....	Acute indigestion.
*Horse.....		Anthrax.....	Anthrax negative.
*Cow's stomach.		Chemical analysis (Chem. Dept.).....	Arsenic poisoning.
Hogs.....	2	Parasites.....	Ascaris Suella.
Homo.....	3 cases	Boils.....	Autogenic Bacterin.
Homo.....	5	Eczema.....	Autogenic Bacterin.
Chicks.....	44	Diarrhoea.....	Bacillary white Diarrhoea.
Chickens.....	2	Sick.....	Black head.
Turkeys.....	14	Sick.....	Black head.
Dog.....		Injured by auto....	Broken leg.
Hen.....		Tumor.....	Carcinoma.
Cattle.....	41	Eczema.....	Clover disease.
Chickens.....	6	Diarrhoea (bloody)...	Coccidiosis.
Cows.....	8	Abortion.....	Contagious abortion.
Horse.....		Bad breath.....	Decayed tooth.
Homo.....	3	Diphtheria.....	Diphtherian otative.
Cow.....		Skin disease.....	Eczema.
Hen.....		Found dead.....	Egg bound.
Calf.....		Scours.....	Enteritis.
Canary bird....		Sick.....	Enteritis.
Hen.....		Bloody diarrhoea.....	Enteritis hemorrhage.
Hogs.....	4	Eczema.....	Follicular mange.
Cows.....	3	Indigestion.....	Forage poisoning.
Horses.....	5	Sick.....	Forage poisoning.
Hens.....	5	Diarrhoea.....	Fowl cholera.
Sheep.....	3	Paralysis.....	Gid in head.
Fowls.....	6	Parasites.....	Hetarakis Pap. & Per.
Hogs.....	15	Sick.....	Hog cholera.
Hogs.....	10	Sick.....	Hog cholera negative.
Hen.....		Sick.....	Impaction of crop.
Hogs.....	7	Indigestion.....	Indigestion (improper feed).
Hogs.....	4	Indigestion.....	Indigestion (lack of water).
Chickens.....	3	Parasites.....	Lanimosioptes cysticola
Milk.....	8	Bacteriological exam..	Mastitis.
Cattle.....	18	Caked udder.....	Mastitis infectious.
Milk.....	6	Bacteriological exam..	Mastitis negative.

<i>Materials, Tissues or Animals Examined</i>	<i>No.</i>	<i>Disease Suspected</i>	<i>Diagnosis</i>
Milk.....	7	Bacteriological exam..	Mastitis infectious.
Cow.....		Abortion.....	Metritis septic.
†Milk.....	16	Exam. for quality....	Good and bad.
Pigs.....	11	Sore mouths.....	Necrotic stomatitis.
Dog.....		Ear trouble.....	Otorrhoea.
Hogs.....	4	Pneumonia.....	Pneumonia.
Water.....		Chemical analysis (Chemistry Dept.)..	Poison.
Middlings.....		Chemical analysis (Chemistry Dept.)..	Poison negative.
Cow's stomach..		Chemical analysis (Chemistry Dept.)..	Poison negative.
Hen.....		Poison.....	Poison phosphorus.
Hen.....		Killed for food.....	Pseudo leukemia.
Bull.....		Mad.....	Rabies.
Dogs.....	8	Rabies.....	Rabies.
Dogs.....	2	Rabies.....	Rabies impossible.
Dogs.....	6	Rabies.....	Rabies negative.
Turkey.....		Big jowls.....	Rickets.
Dogs.....	3	Eczema.....	Sarcoptic mange.
Cattle.....		Shipping fever.....	Septicaemia hemor- rhage.
Sewage.....		Bacteriological exam..	Sewage not properly reduced.
Hogs.....	2	Lock jaw.....	Tetanus.
Cattle.....	4	Barnyard itch.....	Thricophytes mentagro- phytes.
Cows.....	9	Tuberculosis.....	Tuberculosis.
Hogs.....		Diseased meat.....	Tuberculosis.
Pigeons.....		Going light.....	Tuberculosis.
Hogs.....		Indigestion.....	Ulcers of stomach.
Hog Tonic.....		Poisoning.....	Ulcers of stomach.
†Water.....	54	Bacter. analysis.....	Good and bad.

*The Chemistry Department made the chemical analyses.

†This is exclusive of the routine weekly tests of the milk from the University herd.

‡This is exclusive of the routine weekly analyses of the water from the University filtration plant.

Summary—The above represents nearly four hundred diagnoses and includes ten different species of animals, excluding homo.

These trips for the investigation of infectious diseases have been made to eighty-nine farms located at or near the following places: Upper Marlboro, Beltsville, Riggs Mills, Hyattsville, La Plata, Rockville, Ritchie, Solomons Island, Silver Springs, Gaithersburg, Berwyn, Leonardtown, Grave Yard Point, Laurel, Baltimore, Bel Air, Timonium, Camp Meade, Lanham, Brentwood, Landover, Chillum, Riverdale, Oxen Hill, Brandywine, Berwyn Heights, Burnt Mills, Burtons-ville, Catonsville, Sandy Springs, Ammendale, Largo, Seat Pleasant, Waldorf, Bryantown, Dentsville, Sallors, Hughesville, Mechanicsville,

Sharpsville, Crooms, Crooms Station, Chaney, Pindell, Deale, Churchton, Mount Zion, Sudley, Tracys Landing, Friendship, Benedict, Patuxent, Port Tobacco, Cedarville, Forestville, Seabrook, Leland, Darnell, Jewell, Mount Calvert, Boden, Aquasco, Fort Washington, Ryceville, Owings, Chesapeake Beach, McKendrie, Pindell, Drury, Birds-ville and Hardesty.

1920-21—The calls for special visits to the farms of the people of the State have been only about one-half as many as during the previous year. This is undoubtedly due to the fact that we have been fortunate in not having been visited by any serious, widespread epidemics during the year. The tabulation of these trips follows:

FIELD TRIPS

From October 1, 1920, to September 30, 1921

<i>Anim.</i>	<i>Dis. Sus.</i>	<i>Diagnosis</i>	<i>Place</i>	<i>E'st. Mil.</i>
Hogs	Indigestion...	Hog cholera.....	Camp Meade.....	30
Cow	Caked udder...	Strepto coccic mastitis.	Mechanicsville.....	100
Pigs	Sore mouth...	Necrotic stomatitis...	Brentwood.....	10
Cows	.....	Tuberculin test.....	Eccleston.....	100
Hogs	Hog cholera...	Hog cholera.....	Bel Air.....	120
Cattle	Poisoning....	Forage poisoning....	Upper Marlboro...	46
Cattle	Indigestion...	Inspection.....	East Riverdale....	5
Hogs	Constipation..	Hog cholera.....	Bel Air.....	121
Cow	.....	Injury to udder.....	College Park.....	4
Cattle	Poison.....	Forage poisoning....	St. Mary's City....	195
Hogs	Hog cholera...	Hog cholera.....	Bel Air.....	124
Cow	Mad.....	Rabies.....	Bowie.....	20
Cow	Pneumonia...	Traumatic fericarditis.	Chaney.....	80
Cow	Caked udder...	Infec. mastitis.....	Annapolis Jct.....	35
Hogs	Hog cholera...	Hog cholera.....	Bel Air.....	120
Cow	Contag. abor..	Contagious abortion...	Laurel.....	20
Cows	Forage pois...	Forage poisoning....	Upper Marlboro...	48
Cow	Indigestion...	Enteritis.....	Prince Frederick...	140
Cattle	Mad itch.....	Closter disease.....	Linkwood.....	210
Cow	Constipation..	Inspection.....	College Park.....	2
Hogs	Hog cholera...	Hog cholera.....	Sykesville.....	95
Hog	Lock jaw....	Tetanus.....	Hyattsville.....	5
Horse	.....	Heat stroke.....	Solomon's Island...	185
Cattle	Indigestion...	Enteritis		
		(Drinking sewage) ..	Towson.....	85
Horses	Paralysis....	Forage poisoning....	Cheltenham.....	80
Cattle	Pneumonia...	Pneumonia.....	Rockville.....	40
Cow	Cough.....	Tuberculosis.....	Hughesville.....	95
Dog	Rabies.....	Not rabies.....	Hyattsville.....	5
Horse	Abscesses....	Strangles.....	Chaneyville.....	85
Horse	Big leg.....	Lymphangitis.....	Upper Marlboro...	48
Ox	Poison.....	Forage poisoning....	Dentsville.....	85
Turkeys	.....	Black head.....	Island Creek.....	90
Fowls	.....	Vent gleet.....	Bowens.....	92
Dog	Rabies.....	Not rabies.....	Brentwood.....	12
Total.....			34 places	2,532

This includes a more or less close examination of about 1,600 animals in different herds and groups and the diagnosis of 13 different infectious diseases, as well as a number of non-transmissible diseases in the different species of animals.

Cultures for the land inoculation of legumes have been grown at this laboratory and supplied to the farmers throughout the State through their county agents. Cultures sent out include material sufficient for the inoculation of 31 bushels of alfalfa seed, 75 bushels soy beans, 32 bushels cowpeas, 1 bushel of sweet clover and 6 bushels of vetch.

This branch of the work has increased in volume more rapidly than any other. It is requiring more time and materials each year. If we are to continue to supply these cultures to the farmers, and it seems wise to do so if possible, I would suggest that we make a charge of 25 cents per tube. This should cover the cost of the materials used and postage. It would not include a fee for the time required in the preparation of the cultures. The following table shows the number of the different cultures sent out:

**CULTURES SENT OUT FREE OF CHARGE TO THE FARMERS
OF THE STATE FOR THE INOCULATION OF LEGUMES**

From October 1, 1920, to September 30, 1921

<i>Seed to be Inoculated</i>	<i>No. of Culture Tubes</i>	<i>Acres</i>
Alfalfa.....	572	286
Cow peas.....	117	117
Crimson clover.....	38	38
Lima beans.....	15	15
Soy beans.....	1,091	1,091
Sweet clover.....	27	27
Vetch.....	62	62
<hr/>		
Total.....	1,922	1,636

Tuberculin for the diagnosis of tuberculosis has been prepared for the State and sent out for veterinarians, as requested, free of charge. The total amount distributed the past year was 10,684 cubic centimeters. Numerous autogenic bacterins have also been prepared for pus and sent out free of charge.

The amount of tuberculin required by the State has tripled during the past year, as shown by the following table:

TUBERCULIN SENT OUT FROM OCTOBER 1, 1920
TO SEPTEMBER 30, 1921 (Inclusive).

<i>Month</i>	<i>No. C. C. Tuberculin Sent Out</i>	<i>No. C. C. Tuberculin Returned</i>
October.....	1,470 c. c.	16 c. c.
November.....	794 c. c.	00 c. c.
December.....	1,740 c. c.	00 c. c.
January.....	2,396 c. c.	50 c. c.
February.....	3,396 c. c.	00 c. c.
March.....	3,580 c. c.	00 c. c.
April.....	6,090 c. c.	00 c. c.
May.....	3,256 c. c.	00 c. c.
June.....	3,266 c. c.	30 c. c.
July.....	2,330 c. c.	00 c. c.
August.....	1,138 c. c.	00 c. c.
September.....	2,316 c. c.	00 c. c.
<hr/>		
Total.....	31,772 c. c.	96 c. c.

1919-20—Anti-Hog Cholera Serum, Virus and disinfectants, as well as syringes and thermometers have been sent out to the farmers of the State at cost. The following tables show the amounts of the products sent out to the different counties by months.

1920-21—Anti-Hog Cholera Serum, Virus, disinfectants, syringes and thermometers sent out during the past year have materially decreased. This shows rather strikingly that our field work in the control of hog cholera is bearing definite results. The appended tables are self-explanatory:

AMOUNT OR SERUM, VIRUS, ETC., SENT OUT FROM THE BIOLOGICAL LABORATORY AND THE BAL-
TIMORE OFFICE DURING THE YEAR FROM OCTOBER, 1919, TO SEPTEMBER, 1920 (Inclusive).

County	Serum	Virus	Syringes	Therms.	Creosol	Tuber.	Miscellaneous
Allegany	20,400	45	1	..	....	....
Anne Arundel....	27,100	45	5	2	4 qts.	....
Balto. City.....	39,200	1,135	..	..	....	1,400 c. c. 500 ds. 30 ds.	Serum boxes.
Balto. Co.....	61,800	585	..	..	....	....
Calvert	22,375	....	4	4	2 qts.	....
Caroline	9,900	....	2	1	....	....	1 needle
Carroll	11,400	30	1	..	....	214 ds.	
Cecil	20,850	235	1	1	4 qt.	8 ds.	
Charles	13,725	....	2	1	8½ qts.	....	5 doses black-leg
Dorchester	145,600	30	11	..	....	....	17 needles, 3 syr. bbls.
Frederick	97,550	405	..	..	....	1,378 ds.	
Garrett	2,000	....	..	..	....	550 c. c. 30 ds.	
Harford	24,850	....	2	..	....	....
Howard	10,550	....	..	..	6 qts.	....
Kent	131,409	....	6	..	8 qts.	....
Montgomery	18,550	95	..	..	....	245 ds. 110 c. c. 32 ds.	2 washers 10 needles, 1 plunger, 1 lb. cotton, 2 washers, 1 syr. bbl., 1 library step, 1 rub- ber stamp, 1 milk tube
Prince George's..	45,050	45	12	7	87½ qts.	....
Queen Anne's...	89,350	....	6	..	....	....
St. Mary's.....	26,050	....	2	2	3 qts.	....
Somerset	196,575	....	32	8	19½ qts.	....	13 needles, 1 plunger
Talbot	16,300	....	2	..	....	....	2 washers
Washington	48,100	....	1	..	1 qt.	103 ds.	
Wicomico	169,150	1,075	19	2	4½ qts.	....	6 needles
Worcester	183,940	1,065	15	1	6¾ qts.	....	15 needles, 1 syr. bbl.
Out of State.....	104,460	1,065	3	1	9½ qts.	7 ds.	1 black-leg pill
Total	1,536,234	4,790	127	30	163¾ qts.	2,060 c. c. 2,547 ds.	85 articles

REPORT OF THE AMOUNT OF SERUM, VIRUS, ETC., SENT OUT BY THE BIOLOGICAL LABORATORY AND
THE BALTIMORE OFFICE DURING THE YEAR 1920-21 (October, 1920—September, 1921, Inclusive).

County	Serum	Virus	Syringes	Therms.	Creosol	Tuber.	Miscellaneous
Allegany	6,000	....	..	..	....	....
Anne Arundel	33,800	90	2	..	....	....	6 needles
Balto. City	61,700	1,395	..	..	....	....
Balto. Co.	37,900	210	..	..	....	....
Calvert	1,150	....	..	..	....	....	1 needle
Caroline	3,450	....	..	..	....	....
Carroll	16,650	30	..	..	....	....
Cecil	25,400	435	1	..	....	....
Charles	200	....	..	..	....	1 qt.	
Dorchester	22,300	15	3	..	....	....	6 needles
Frederick	22,000	90	..	..	....	....
Garrett .....	....	....	..	..	....	....
Harford	25,550	....	..	..	....	....
Howard	7,050	....	..	..	....	....
Kent	134,450	195	1	..	....	3 gals.	1 needle
Montgomery	950	....	..	..	....	....
Prince Geo.	14,050	285	5	3	....	174½ qts.	4 needles
Queen Anne's.	32,500	....	1	1	....	....
St. Mary's	4,200	60	..	..	....	....
Somerset	39,700	....	1	..	....	8½ qts.	1 needle; 1 needle glass; 1 syr. bbl.
Talbot	24,420	165	3	..	....	....
Washington	12,950	135	..	..	....	....
Wicomico	24,950	....	7	1	....	....	6 needles
Worcester	30,500	....	3	..	....	2 qts.	2 needles
Out of State	4,950	375	1	..	....	....	2 needles
Total	586,770	3,480	28	5	....	198 qts.	31 articles

With the growth of the work our present Laboratory Staff has already become inadequate properly to take care of all of our duties. This, with the continued increasing demand for our products and our services, will necessitate the addition of at least one man to our forces within the next two years, or we will have to eliminate some of our activities. Unless absolutely necessary, such a step would be a great misfortune, especially to the live stock interests of the State. We should have a graduate veterinarian with some experience who could devote his full time to the laboratory work. His salary should be from \$2,000 to \$2,500 per year to start with.

We are also in great need of a clerk for the laboratory who will be able to devote his or her full time to the work. Such a person must, of course, be a stenographer, and in addition have a knowledge of bookkeeping and understand library filing methods. This will require a salary of at least \$1,500 per year to start with.

We are also very much handicapped by the lack of a proper working reference library. For this purpose a fund of \$2,000 is badly needed. This would allow us to purchase a great many badly needed text-books and working references, and the \$500 per year would very nicely take care of the additions in the way of new books, and also have available money for the binding of periodicals.

Other items which will demand attention in the future are an incinerator to take care of dead animals, a vacuum drying oven, and other needed laboratory apparatus, as well as more laboratory office room.

It is again necessary to point out the absolute necessity of increasing our Laboratory Staff if the work is to continue without curtailment. As a matter of fact, we have already reached the stage where the routine work requires all of our time. This is a most serious situation, as it leaves no time for research. The efficiency of the Staff can only be held up to a high level by research work. Further, the reputation of an institution is largely based upon the published research; and last, the new knowledge thus obtained is of inestimable value.

We should have one full-time man who can devote his whole time to the study of contagious abortion. His salary should be about \$2,500 per year to start. We should also have another full-time man to devote part of his time to teaching, and the remainder to routine laboratory work. This would allow all of the members of the staff sufficient freedom to prosecute at least one research project. The salary for this position should be \$2,500 per year to start with. The clerk referred to in the 1920 report is becoming almost an absolute necessity.

The funds of \$2,000 for a reference library and \$500 per year thereafter for periodicals, bindings, and new text-books should be obtained if possible. Access to up-to-date books and periodicals is an absolute necessity in keeping up to date in laboratory work. A fund

of \$1,000 should also be made available to the Staff of the Laboratory for traveling expenses. This would make it possible to attend the meetings of the different scientific societies along our line of work. The principal meetings which should be attended are the American Veterinary Medical Association, the Live Stock Sanitary Association, and the American Bacteriological Society. This would also make it possible to make trips to other laboratories and study their methods. Still another need for such a fund is traveling expenses incurred in obtaining research material from the field. There is at present no way of meeting these expenses.

The Laboratory should be provided with a small poultry plant. A small house and about 12 or 15 chickens should be kept for animal inoculation and experimentation in connection with our poultry diagnosis. Such a plant should not be in proximity to the regular poultry plant of the Experiment Station. It could be maintained for a very small sum annually.

An experimental herd of five or six cattle should be maintained in connection with our work in contagious abortion. Again, this herd should be entirely separate from the Experiment Station herd.

The other needs consist of an incinerator for the disposal of dead animals, a Bureau of Standards turbidometer and some other laboratory apparatus and supplies.

Very respectfully submitted,

E. M. PICKENS, *Pathologist and Bacteriologist.*

BIENNIAL REPORT
of the
University of Maryland
and
The Maryland State Board of Agriculture

From September 30, 1921, to October 1, 1923.

Including a Summary of the Work and Needs of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of the work under the jurisdiction of the University and State Board of Agriculture, with estimates of the financial needs for the years 1925, 1926 and 1927.



Official Publication of the University of Maryland
Vol. 20 January 1, 1924 No. 2



TABLE OF CONTENTS

	PAGE
Letters of Transmittal.....	5
Organization of the Board.....	6
Introduction	7

THE UNIVERSITY

College of Agriculture.....	24
College of Arts and Sciences.....	41
College of Commerce and Business Administration.....	43
College of Education.....	45
Summer School.....	52
College of Engineering.....	54
Graduate School.....	57
College of Home Economics.....	66
School of Medicine and College of Physicians and Surgeons.....	69
School of Pharmacy.....	73
School of Law.....	75
School of Dentistry.....	77
Extension Service	79
Agricultural Experiment Station.....	105
Maryland State Board of Agriculture Live Stock Sanitary Service	114
Reserve Officers' Training Corps.....	117
Department of Health.....	119
Forestry Department	121
Maryland Geological Survey.....	128
The Library	130
Registrar's Report	135
Eastern Branch of the University of Maryland.....	138
Financial Department	142
Financial Report	177

LETTERS OF TRANSMITTAL

*His Excellency, Governor Albert C. Ritchie,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last biennium. Appended you will find a statement of the financial needs for the next three years.

Very truly yours,

SAMUEL M. SHOEMAKER,

*Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.*

January 1st, 1924.

*Hon. Samuel M. Shoemaker,
Chairman, Board of Regents of the University of Maryland
and of the Maryland State Board of Agriculture.*

Sir: Herewith I am submitting a brief report of the work of the University of Maryland, the Maryland State Board of Agriculture, the Agricultural Experiment Station, Extension Service, and the other branches of work under the two Boards for the last biennium. A statement showing the financial needs of the University and the State Board of Agriculture for the next three years is appended. I am also submitting a short statement of the various funds other than State appropriations used for the support of the University.

Very truly,

ALBERT F. WOODS,
President and Executive Officer.

January 1st, 1924.

BOARD OF REGENTS

(Members appointed by the Governor for terms of nine years) :

SAMUEL M. SHOEMAKER, Chairman.....	1916-1925
Eccleston, Baltimore County	
ROBERT CRAIN	1924-1933
Mt. Victoria, Charles County	
JOHN M. DENNIS, Treasurer.....	1923-1932
Union Trust Co., Baltimore	
DR. J. FRANK GOODNOW.....	1922-1931
6 West Madison Street, Baltimore	
JOHN E. RAINE.....	1921-1930
413 East Baltimore Street, Baltimore	
CHARLES C. GELDER.....	1920-1929
Princess Anne, Somerset County	
DR. W. W. SKINNER, <i>Secretary</i>	1919-1928
Kensington, Montgomery County	
B. JOHN BLACK.....	1918-1927
Randallstown, Baltimore County	
HENRY HOLZAPFEL.....	1917-1926
Hagerstown, Washington County	

COMMITTEES

EXECUTIVE

SAMUEL M. SHOEMAKER, Chairman
 DR. FRANK J. GOODNOW
 B. JOHN BLACK
 ROBERT CRAIN
 JOHN M. DENNIS

UNIVERSITY AND EDUCATIONAL WORK

DR. FRANK J. GOODNOW, Chairman
 ROBERT CRAIN
 DR. W. W. SKINNER

EXPERIMENT STATION AND INVESTIGATIONAL WORK

B. JOHN BLACK, Chairman
 DR. W. W. SKINNER
 HENRY HOLZAPFEL

EXTENSION AND DEMONSTRATION WORK

ROBERT CRAIN, Chairman
 B. JOHN BLACK
 JOHN E. RAINE

INSPECTION AND CONTROL WORK

JOHN M. DENNIS, Chairman
 HENRY HOLZAPFEL
 CHARLES C. GELDER

Introduction

The Board of Regents of the University of Maryland.

Gentlemen: As pointed out in previous reports the various state services and departments grouped under the Board of Regents of the University of Maryland have such close relation to one other that they can best be discussed together. This includes the work of the colleges at College Park, Baltimore and Princess Anne, the Extension Service, the Experiment Station, the Live Stock Sanitary Service, Seed Control, Feed and Fertilizer Control, Nursery Inspection, the State Department of Forestry, the State Geological Survey, and the State Weather Service. Much progress during the biennium has been made by all these groups, as will be evident to those who read the brief reports presented herewith.

The University was organized to meet the outstanding State needs in education in such manner as to supplement, with as little duplication as practicable, the work being done by other institutions. The need for and the demand for higher education in this State are both greater than the facilities for giving it. Every school in the country *maintaining high standards* is turning away students by the hundreds, due to lack of room, equipment, and teaching force. The individual States and the national government are studying this phenomenon with great care. The same situation exists throughout the civilized world. It is apparent to all thinking people that individual and national well-being depends in the last analysis on sound educational policies and leadership. Education must develop the *best qualities* of the individual and help him to fit in where he or she can render the best service to the community at large and *get*, as well as *give*, the *most* satisfaction in rendering such service.

The University looks upon the various kinds of business of the citizens of Maryland as service organizations rather than agencies of individual or group aggrandizement. Training for business (used in its larger sense), conducted with this aim is one of the best investments that the State can make. It stimulates individual initiative and responsibility. It stimulates the development of productive resources. It conserves what has been produced. It avoids extremes and promotes co-operation and good feeling. Workers in all fields of endeavor should be rewarded not on the basis of what they can *get*, but on the basis of what they *give*. I am glad to testify that this is rapidly becoming the dominating spirit of American life today. True culture consists in learning to love work for the good that it can do.

Our educational system must represent, cherish and inculcate the highest ideals of American life. The best that we have learned must be passed on to the generations to follow and the acquisition of new knowledge and new truth must keep pace with our increasing needs.

We must dignify, recognize and properly reward every kind of service necessary to the well-being of the people of our State and country. Education for such service is the most effective way of accomplishing this.

The work of the University is conducted through the following units:

THE COLLEGE OF ARTS AND SCIENCES, in which the foundation is laid for the professional schools. The demands on this college are heavy, especially on account of the work it does for the other colleges of the University. Its outstanding needs are more instructors, more laboratories and classrooms and equipment. Provision must be made next year for dividing some of the larger classes, but adequate provision cannot be made until money is available for additional instructors and equipment and for an Administration Building, including business offices, library and classrooms, costing, with equipment, \$330,000, and for a Science Building and laboratories, costing, with equipment, \$295,000. The buildings now being used were never intended to accommodate more than 250 to 300 students at most, and must now accommodate about 900. The wooden stairways make all of them particularly dangerous in case of fire. Morrill Hall can be repaired and used temporarily for the College of Education. The old gymnasium, now being used for the library, can be converted into a very satisfactory Music Building and the old Chemistry Building will be needed for the Department of Soils, which is now very inadequately provided for. The cost of refitting the old Library Building for the Music Department, including the necessary instrumental equipment, will be \$25,000. The refitting and equipment of Morrill Hall for the College of Education will cost \$15,000 and the refitting of the Chemistry Building for the Soils Department will cost \$20,000. In all of these buildings the present wooden stairs should be replaced with steel or concrete as a protection in case of fire. Many of the partitions should be reconstructed of steel lath and concrete plaster.

THE COLLEGE OF AGRICULTURE. The removal of the administration offices and the College of Education from the Agricultural Building will give much needed space to the College of Agriculture and the Extension Service. The rapid growth of these branches of the work, however, makes it necessary to still further relieve the pressure on the Agricultural Building. This can best be accomplished by making special provision for horticulture. Horticulture is of such outstanding importance in Maryland and the demands on the college have grown so fast that the department has far outgrown its present facilities in all respects—teaching and investigational staff, buildings, grounds and

equipment. A Horticultural Building, equipment and additional green-houses will require at least \$245,000. An irrigation system costing \$500 is also necessary for this department. The transfer of part of our Experiment Station and farm work to a new location will release land here well adapted for and greatly needed for horticulture. For the development of the practical and scientific work in agriculture, including Farm Crops, Dairy and Animal Husbandry, Soils, etc., it will be necessary to have additional land. This can now be secured at reasonable cost within easy access from our central plant. Delay will mean much greater cost later on. Our agricultural work has grown to the point where we must have this land, with necessary buildings, stock, and equipment if we are to handle our work properly and efficiently. We will need for this purpose at least \$90,000. (Land, \$30,000; buildings, including garage, tools and equipment, \$40,000; livestock—dairy breeds, beef breeds, horses, hogs, \$20,000, a total of \$90,000).

The allotment of \$71,300 of the bond issue made for Animal Husbandry Farm, including land and Dairy Manufacture Laboratory was used largely for the Dairy Manufacture Laboratory. On account of the urgent need of adding a sales department to popularize the use of milk drinks and various products of dairy manufacture, the Board of Regents secured a temporary loan of \$40,000 and re-located and re-designed the building so as to take advantage of the educational opportunity of the 670,000 automobile parties that pass the building on the Baltimore-Washington Boulevard each year. It is expected to realize a net income of at least \$10,000 a year in addition to the educational work accomplished. It is planned to use this to repay the loan in case the money is not otherwise provided.

The item in the bond issue did not provide for the dairy equipment for this building. About \$40,000 will be needed for this purpose.

The Poultry Department is rapidly growing in importance, both in its training of students and in co-operation with the industry in the State. It is one of the largest and most profitable agricultural specialties in the State and more attention must be given to it by the College. This will require additional buildings and equipment, amounting to \$33,000.

THE COLLEGE OF ENGINEERING is one of the older colleges of the University. With the rapidly increasing demand for trained engineers in various lines of industrial development this College has grown rapidly. It has rendered important service to the State, not only in training men, but in the solution of intricate engineering problems through the Engineering Research Laboratories. The Highway Research Laboratory in particular has been highly commended by National and State experts for the valuable work it has accomplished. This College has outgrown the old buildings in which it has been located for many years. It is now necessary to add a large wing to house the shops and power plant, which, besides serving part of the

institution as a central power plant, is used for educational purposes, also. This addition, including equipment and connecting tunnels to new buildings to be heated, will cost \$230,000.

THE COLLEGE OF HOME ECONOMICS has been developed in response to the need for training in this field. The course stresses the arts and sciences which contribute to the home. The College of Arts and Sciences is drawn upon for some of this work and the other colleges contribute special courses. The more technical courses in this field are provided by the College of Home Economics, not only for the students majoring there, but also for those in Home Economics Education and for students in other colleges desiring special courses in this field. The facilities for the women's work are very inadequate. This important field cannot be developed as it should be until we have a building especially constructed for this purpose. For such a building and equipment at least \$120,000 is urgently needed.

In this connection, I desire to call attention again to the urgent need for *additional dormitories for women*. At present the only dormitory space available is in the old house formerly occupied by the President, accommodating about 20 girls, the Home Economics Practice House, accommodating about 18 girls, and the old temporary frame structure known as the "Y" Hut, accommodating about 15 girls. The latter building is purely a temporary structure and must be replaced at the earliest possible time. There are many young women who desire to take courses in the University who are prevented from coming on account of lack of dormitory space. Provision should be made at once for 150 women. This will require \$174,000 for building and equipment.

Additional dormitory space for at least 200 men should also be provided during the next three years. The present dormitories are overcrowded and there are many living outside who would be much better off in every way on the campus. Overcrowding is not conducive either to health or study. The amount needed for this purpose is \$210,000.

A new Dining Hall is another of the urgent needs at College Park. The building used at present is a temporary frame structure partly built during the World War and now at the end of its usefulness. It must be replaced without delay. It will cost \$190,000.

Among the other urgent improvements needed at College Park are two miles of concrete roads and pavements, \$65,000; Improvements to Grounds, \$15,000; Water and Sewer Extensions, \$20,000, and Laundry Building and equipment, \$40,000. All of these have been urgently needed for several years, but have been delayed from year to year for lack of funds.

COMPLETION AND EQUIPMENT OF GYMNASIUM. The item in the last bond issue of \$142,000 for Gymnasium, Armory, Assembly Hall, Recreation Center and Athletic Grounds was sufficient to com-

plete the Stadium and iron fence around the Athletic Field and to erect a creditable Gymnasium. The plans had to be severely cut in order to procure a building within the amount available. When the structure was partly completed the contractor gave notice that he would be unable to complete it on account of financial difficulties. The bonding company was notified, but refused to complete the work. On the advice of the Attorney-General and with the approval of the Board of Public Works the University at once took over the project to complete it according to contract, with a view to filing suit to recover the cost. This will involve an expenditure in excess of the contract of something over \$20,000; \$10,000 of this was advanced by the Board of Public Works and the balance borrowed through the Athletic Association. An item of \$20,000 is requested to repay these loans. Whatever may be collected from the bonding company will be returned to the State Treasury. A further item of \$10,000 is requested for equipping this building and preparing the first floor rooms for the use of the Armory.

Special equipment for the Engineering Building is urgently needed, amounting to \$5,000 and for the University Printing Plant, \$6,850. The local printing plant can take care of small jobs of rush work much more satisfactorily than the Penitentiary Plant or other outside plants, though most of our large jobs are done by the Penitentiary or other plants.

This makes a total for buildings, equipment and improvements needed at College Park of \$2,244,350. As indicated above, the plant at College Park must care for the College of Arts and Sciences, College of Agriculture, College of Engineering, College of Education, College of Home Economics, the Graduate School, Department of Military Science and Tactics, Department of Physical Education and Recreation, the Extension Service, the Experiment Station and the Summer School.

The total College Park registration this last year numbered 1,278 students, 69.09 per cent. from Maryland, 15.95 per cent. from the District of Columbia, 14.24 per cent. from other States, and 0.70 per cent. from foreign countries.

Passing now to the building and equipment needs of our University work at Baltimore, the outstanding requirement is a modern fireproof hospital and laboratories for the Schools of Medicine, Dentistry and Pharmacy. The work and needs of these three schools are closely related and must, in the future, be carried out in close co-operation, requiring equivalent preliminary preparation of two years of Arts and Science college work. These three schools could co-operate closely in dispensary work. This last year the hospital and dispensaries handled a total of 171,601 dispensary visits and cases. These were distributed as follows:

UNIVERSITY OF MARYLAND HOSPITAL:

Clinics	58,517
Hospital	10,465
Dental School.....	60,000

PHYSICIANS AND SURGEONS BUILDING AT MERCY HOSPITAL:

Clinics	39,969
Hospital	2,650

COMPILATION

Available Floor Space:	Square Feet
University of Maryland Hospital.....	51,497.22
Physicians and Surgeons.....	37,581.16
Medical Building (Original).....	9,007.43
Gray Laboratory.....	6,876.86
Davidge Hall.....	5,924.72
Pharmacy	8,307.10
Dental Building.....	17,141.17
<hr/>	
Total Floor Space (square feet).....	136,335.66

TOTAL NUMBER OF PATIENTS TREATED DURING 1922-1923 IN THE HOSPITALS AND VARIOUS CLINICS

UNIVERSITY OF MARYLAND HOSPITAL:

Clinics	58,517
Hospital	10,465
Dental School.....	60,000

Total.....	128,982
------------	---------

PHYSICIANS AND SURGEONS:

Clinics	39,969
Patients handled by Accident and Admit- ting Department, Hospital.....	2,650

Total.....	42,619
------------	--------

GRAND TOTAL.....	171,601
------------------	---------

The distribution of these cases in the city and State is shown by the following compilation:

Record of the several clinical departments of the University of Maryland showing area from which patients are admitted, the same being based on percentage per 1000:

UNIVERSITY OF MARYLAND HOSPITAL.

Percentage drawn from within 4 sq. mi. limit.....	19%
“ “ “ “ balance of city proper.....	39%
“ “ “ “ counties	34%
“ “ “ “ other States	08%

PUBLIC CLINICS CONNECTED WITH THE UNIVERSITY OF MARYLAND HOSPITAL.

Percentage drawn from within 4 sq. mi. limit.....	35%
“ “ “ “ balance of city proper.....	55%
“ “ “ “ counties	08%
“ “ “ “ other States.....	02%

DENTAL CLINIC, UNIVERSITY OF MARYLAND.

Percentage drawn from within 4 sq. mi. limit.....	36%
“ “ “ “ balance of city proper.....	44%
“ “ “ “ counties	20%

BABY CLINIC, UNIVERSITY OF MARYLAND.

Percentage drawn from within 4 sq. mi. limit.....	47%
“ “ “ “ balance of city proper.....	46%
“ “ “ “ counties	07%

The increase in usefulness of these agencies to the people of the State is shown by the continued development of the Medical Extension Service. The week-end clinics held for the special benefit of the practitioners in the counties have been largely attended and show constantly increasing interest. The demand for field clinics has also increased.

The Division of Medical Extension of the University of Maryland offers this year for the first time a series of short courses to the physicians of the State. It is hoped that they will meet the needs of those who wish to inform themselves concerning recent advances in the methods of diagnosis and treatment.

This constant and increasing co-operation between the University and the medical men of the State is helpful to both and is securing the largest use of the agencies possessed by the State for the care of the sick and the prevention of disease. These three schools of the University are also co-operating closely with the State Board of Health, the Baltimore City Department of Health, as well as with the national health authorities and with other medical schools and hospitals. These hospitals and clinics are the most important aid in the training of practitioners.

The University of Maryland is making a special effort to train general practitioners who will have a special interest in and knowledge of the needs of rural communities, as well as those who are specialists or interested in city practice. The University has trained the large majority of the physicians practicing in Maryland outside of Baltimore. This is true also in Dentistry and Pharmacy.

The new hospital, laboratories and equipment for these schools will cost in the neighborhood of two million dollars, of which the State

is asked to appropriate \$1,115,000, with the hope that the balance can be secured through private donations.

As a center for industrial accidents and emergency work the present location of the University Hospital has many advantages. It should, however, be more isolated from the disturbances of heavy traffic. This might be accomplished if the city would condemn a lot of old tumble down structures now a fire menace and a menace to health and convert the property into park space sorely needed at that point, or turn it over to the State for that purpose. It would be only a fair and deserved recognition of the workers in our industries who daily sacrifice so much for the promotion of the general welfare. In addition to this downtown location, the University needs a hospital and university center within easy reach of the present center, where its general educational work can be conducted and where room for expansion can be secured at less cost. Several more or less satisfactory locations are under consideration.

It is expected that the \$3,551,500 needed for buildings, land and permanent equipment at College Park and Baltimore may be provided for by a bond issue during the next three years. This would place the institution on a par with other State institutions of its class. The University of Maryland, however, renders many types of service to the State not handled by State universities of other States; for example, the State Department of Agriculture and the Live Stock Sanitary Service.

MAINTENANCE

The maintenance or yearly operating expenses are derived in part from State appropriations 31%, in part from Federal appropriations 12%, and partly from fees 57%. Such services as the dining hall, dormitories, laundry, students' book store, University Press, etc., are run on a fee-to-cover-cost basis. This does not include buildings, major repairs or permanent equipment. The appropriations from the Federal Government are for specific purposes, such as Agriculture and Engineering, Smith-Hughes Teacher Training, Smith-Lever Agricultural Extension, and the Hatch and Adams Acts for the Experiment Station. The Extension and Experiment Station funds cannot be used for teaching purposes. This is true also of all State appropriations for these and similar specific purposes, like Live Stock Sanitary Control, Seed Control, etc.

For teaching purposes proper in an institution of 1,000 students, there must be available for general overhead, such as salaries, wages, supplies, heat, light, power, postage, printing, library, classroom and laboratory supplies, etc., an income of \$500,000, or approximately \$500 per capita, in addition to receipts from fees and other sources. On the basis of our present registration this would require \$450,000 for the schools at College Park. This amount should have been available this

biennium. As a matter of fact, we have had only \$213,310.45 or only a little over half of the amount necessary, in addition to fees, to conduct the work in every way up to the standard required of institutions of our class. The result is that our salary scale is below the average of schools of our class, making it difficult to hold good teachers. Our classes are much too large and our equipment is not sufficient for the requirements. We must remedy this at once. What we are asking for this purpose is only the average available to standard institutions of our class.

MEDICAL SCHOOL.

The rapid reorganization of medical education in the United States has resulted in the elimination of most of the schools doing inefficient work and has set standards high enough to insure well trained men in this highly important service to the community. In fact, the elimination has gone so far that there is already an acute shortage of physicians in many communities. The State universities must be depended upon to see that the needs of all the communities of the State are adequately met in this respect. As already pointed out, the University of Maryland has maintained its position as a Class A institution for more than a century and has been and is today the principal source of general practitioners especially for this State.

The cost of medical education of the present standard type is considerably higher than formerly. If a large part of the clinical teaching work was not contributed by men in active practice it would be impossible to do creditable work with the funds available, now amounting to \$53,160, from the State; \$7,140 from the City of Baltimore for handling certain city work; \$3,509 from miscellaneous sources, and \$96,550 from student fees, making altogether \$160,359, or a total of approximately \$500 per student. The minimum available, when a large part of the teaching service is contributed, should be \$700 per student, of which the State should appropriate half. This would amount to about \$100,000 from the State and about \$100,000 from fees and other sources, basing the school on 300 students. We now slightly exceed this number. The amount requested for the next three years is \$70,000 a year, an increase of \$27,500, with the hope that some aid may be secured from other sources.

THE UNIVERSITY HOSPITAL

The University Hospital is the great practical laboratory for clinical teaching. Here the students come into intimate contact with all types of disease and methods of treatment. While we enjoy close working relations with several State and local hospitals, especially Mercy Hospital, the major part of our work must be done at the University Hospital. Here also is located the Training School for Nurses. I have

already called attention to the large number of cases handled each year at this Hospital and the poor facilities available for doing the work. Being essentially a teaching hospital, it must handle a very large proportion of free work. The income from the relatively small proportion of pay cases cannot, therefore, be expected to pay the cost of maintenance of the Hospital. The amount paid for the free cases by the State and City is on the average about one-third the actual cost. The actual net loss on present operations is about \$40,000 a year, or about \$4.00 per capita for hospital patients only, or about 60 cents per capita, including dispensary patients. We are asking for the next three years only the amount estimated to be necessary to enable us to break even; viz.: \$62,500. We should have at least an additional \$10,000 a year to enable us to improve the service. The urgent need for a new fire-proof hospital has already been referred to.

THE DENTAL SCHOOL

The importance of dental education to the community at large has only in recent years come to be fully appreciated. The dental schools are now undergoing the same evolution that the medical schools went through a few years ago. Dentistry is in reality a speciality of medicine. The training for practice should be on a par with that required for medicine.

The first dental school in the United States was established in Baltimore and has now been consolidated with the School of Dentistry of the University of Maryland. It is our purpose to reorganize this school as rapidly as possible to meet the best modern requirements. The amount requested from the State for the first three years for this school is \$25,000 a year. The State now allots to this work \$4,100 in teaching from College Park and \$3,150 for the biennium for equipment. The income from fees amounts to \$54,153 and from the dispensary and infirmary \$14,000. Over 60,000 cases, mostly free, are handled each year. We hope to receive some aid from outside sources in developing this school.

THE SCHOOL OF PHARMACY

This school has a very important service to render in training pharmacists. The pharmaceutical industry and profession in Maryland represents a capital investment at present of approximately thirty-nine million dollars and is increasing each year. The school has had little help from the State. At present it receives \$3,150 for equipment for the biennium and teaching help from College Park of \$4,100 a year; also receives in student fees \$26,597. It is sorely in need of additional assistance. We are requesting for the next three years \$20,000 a year.

THE EXPERIMENT STATION

The work of the Experiment Station in the study of soil fertility, cultural methods, improvement of crops and animals, control of their diseases and in many other lines vital to profitable and successful agriculture is fully recognized. On a most conservative estimate Maryland farmers receive over fourteen million dollars a year more for their labor as a result of new and improved varieties and methods introduced by the Experiment Station. Our whole scientific agriculture has grown out of this work. The problems now in hand and awaiting solution are more important and more numerous than those already solved. The State now appropriates \$63,900 a year for the investigational work proper and the Federal Government \$30,000 a year. There is now a bill in Congress that we hope may be enacted into law which will make a substantial increase in the Federal appropriations. In addition to the above, the State appropriates \$5,500 a year for the biological products laboratory, \$8,200 for seed inspection and \$5,000 for the branch station at Ridgely, making a total of \$82,600 appropriated by the State for this work. This, with \$30,000 from the Federal Government and \$21,550 from farm and laboratory receipts for products, makes a total from all sources for the work of \$134,150. The State appropriation should be increased to \$100,000, which, with the increase expected from the Federal Government, will enable us to maintain the work about on its pre-war basis and undertake some very pressing new investigations.

THE EXTENSION SERVICE

This service is becoming more appreciated and important each year. It offers the main channel through which the University and the National Department of Agriculture aids the farmer and helps to improve rural life, and thus aids in general prosperity. The State Smith-Lever required to offset the Federal appropriation for this purpose now amounts to \$46,287.11. The County Demonstration Fund is now \$48,000 and should be increased to \$76,000. The General Extension Fund now \$15,000 should be increased to \$25,000. The State Horticultural Fund now \$8,000 should be increased to \$30,000. The demands for help in controlling insect and disease pests and in nursery, orchard and field inspection for this purpose are far beyond our power to respond.

In order to meet the requests of the canners of the State, as well as the large number of growers who can crops, we are requesting an appropriation of \$10,000 to be especially devoted to the promotion of this industry. The canning industry represents over \$40,000,000 to the State. It has experienced many difficulties. During the past year a movement has been started to increase the yield of tomatoes per acre in order to save the industry for the State, as the growers

and canners cannot compete with Western States when our yields are so low. Commendable progress has been made in 1923 in our extension work to aid this industry. There are, however, several outstanding problems in connection with tomato growing, sweet corn and peas that demand early attention. This appropriation is requested so that we can be in position to employ specialists who will devote their entire time to working in the interests of the canning industry. This industry has never requested any assistance from the State, but it would seem that the State could well afford to spend \$10,000 to support and maintain a \$40,000,000 industry.

An appropriation of \$10,000 is urgently needed to be used for agricultural exhibit purposes. The extension service is called upon constantly by the rural people of the State to make exhibits at community fairs, county fairs and State-wide fairs. We have had practically no funds to devote to this important phase of education. Undoubtedly money spent for making attractive and educational exhibits oftentimes is most valuable in conveying the results of investigation to the people. Even this amount will not permit of very elaborate exhibits, but it will enable us to make a start in building up exhibit material that will be invaluable in illustrating modern practices in agriculture.

For the past three legislatures, we have requested an appropriation to assist in conducting marketing work in the State. At previous times it has seemed necessary to refuse the allowance of this appropriation. In the meantime, the problems in marketing farm products have become more and more acute until now the people of the State will, we believe, insist upon adequate provision being made for this important work. The Farm Bureau, the organization of the counties and State for the purpose of aiding in co-operative marketing, furnishes an additional need for the service to be in position to extend such assistance as may be necessary to the commodity organizations that will be erected. We have done everything that our limited force and funds would permit in aiding the various industries of the State with marketing problems, but there is much information that we lack and a great deal of work that should be done to meet the present demands in the marketing of farm products. Aside from the information and survey work, there is need for regulatory provisions which will provide for the proper standardization of containers, grades and grading and other features concerning the disposal of farm products on our markets. The following plan is proposed for this work:

1. Purpose.

To promote more economical methods of marketing and distributing farm crops by collecting and diffusing timely information related to seasonal demand, supply and prevailing prices of farm products at various markets, both wholesale and retail, by co-operating with the U. S. Bureau of Markets and Crop Estimates in making reliable esti-

mates of crop production and disseminating such information to producers and consumers; by advising and assisting in the organization and maintenance of producers and consumers co-operative selling and buying associations; by investigating the cost of distributing farm products and publishing the results of such investigations; by investigating delays, embargoes, charges, rates and practices in handling, transportation, storage, buying and selling farm products which may impede the free and efficient movement of such products from the producer to the consumer; by establishing and promulgating standards to be used by producers and distributors in grading and classification of farm products and by establishing and promulgating standards for containers and receptacles for such products; and by providing for inspection of farm products at shipping points and points of destination to determine grades, methods of packing, etc., and to enforce standards for grades, receptacles and containers. All work as far as possible to be conducted in co-operation with the Bureau of Markets, U. S. Department of Agriculture.

2. Marketing Information.

a. Supplying producers and consumers with daily market quotations on farm products—by mail, telegram, wireless and telephone.

b. Securing and disseminating to producers information concerning foreign markets, especially on fruits, grains and tobacco.

c. Securing and disseminating to producers information concerning supplies, containers, etc.

d. Securing data for accurate estimates of crop yields and acreage in advance of harvesting time and the publication and dissemination of such estimates for the benefit of the public.

3. Investigations.

a. Exhaustive, year-round investigation of the marketing of perishable crops, especially in the Baltimore market, with a view to devising systems of distribution more advantageous to both producer and consumer.

b. Exhaustive investigation of the marketing of truck, canning and fruit crops, grain and livestock with a view to preventing waste, avoiding gluts and establishing the industry.

c. Investigation of plans of "Direct Marketing" between producer and consumer with a view to inaugurating such systems of marketing on a safe and economical basis.

4. Advising and Assisting in the Organization of—

a. Co-operative Grain Shipments.

b. Co-operative Livestock Associations.

c. Co-operative Grading and Pooling of Wools and Lambs.

- d. Co-operative Truck Growers' Associations.
- e. Co-operative Canning Crop Associations for both growing and canning their products.
- f. Co-operative Motor Transportation Association.
- g. Co-operative Consumers' Associations.

5. Promulgation and Endorsement of Grades and Standards.

- a. Extension of Grading and Pooling Law of Maryland and enforcement of the same.
- b. Establishment of standard containers and receptacles for farm products and the enforcement of the same.
- c. Inspection at points of origin and destination of products, methods of packing, methods of transportation and storage.

Under existing legislation, the State Board of Agriculture has authority to conduct marketing work in this State. Under authorization by the State Board, the Extension Service has conducted marketing work as far as available funds have permitted.

THE STATE BOARD OF AGRICULTURE

Most of the police and administrative work of the State Department of Agriculture is handled through the University; for example, the Fertilizer and Feed Control are handled through the Department of Chemistry, the Seed Control through the Experiment Station, the Nursery and Bee Inspection through the Extension Service, and Marketing, Organization and Information through the Extension Service. The Division of Bacteriology and Animal Pathology handles the diagnosis and investigational work of the Live Stock Sanitary Service. We have found this plan more effective and economical than setting up separate agencies for this work. In the Live Stock Sanitary Service the two principal projects are Tuberculosis Eradication and Hog Cholera Eradication. The total expenses for this work, including \$85,000 indemnity fund, is now \$145,750. The \$145,750 now available should be increased to at least \$302,040, the increase to be used largely for indemnity. This, with the increased Federal offset, should enable us to practically complete the Tuberculosis Eradication work in the State during the three years. The cost of supervision of the accredited herds will be greatly decreased. For a fuller discussion of this project see the report of the Live Stock Sanitary Service in this volume.

THE LAW SCHOOL

The Law School has up to the present time been able to conduct its work on the income from fees. While the work has been of excellent quality of its kind, this method is no longer accepted as standard. The American Bar Association has recently made definite and

positive recommendations which must be followed if our work in law is to be accepted as meeting even the minimum requirements of standard schools. The first step has already been taken by the Faculty of Law in the appointment of a full-time associate to the dean. Several additional full-time men should be appointed at the earliest possible time and two years of college work required as a prerequisite.

THE COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION

Up to the present time this work has been conducted as an extension program of the Department of Commerce and Business Administration of the College of Arts and Sciences. The demand for work of a high grade in Baltimore is beyond our resources. The fees furnish the larger part of the money needed to handle the work effectively, but as in the case of the Law School, if the work is to come up to the high standard that should be maintained by the University we must have at least three full-time men, in addition to the Dean and Director of the Extension Courses, and we must provide suitable room and equipment. This will require \$15,000 in addition to fees.

This brings the total annual maintenance for the University proper, the Experiment Station, Extension Service, State Department of Agriculture, including the Live Stock Sanitary Service, to \$1,529,529.55, for 1925; \$1,572,169, for 1926, and \$1,574,074.55, for 1927.

EXTENSION COURSES IN MINING ENGINEERING

Since the organization of our Department of Mines, attention has been called to an urgent need existing in the mining districts of our State for extension short courses covering the principles of operation, mine ventilation, rescue work, etc., necessary to the proper and safe conduct of this great industry. Under the new laws and regulations, superintendents and operators must pass tests which they cannot do without the help of these courses. At the present time they are not obtainable in Maryland. At the urgent suggestion of the Director of the Maryland Bureau of Mines and with the approval of the Governor, the University, in co-operation with the Maryland Bureau and the U. S. Bureau of Mines and the Superintendent of Schools of Allegany County and the State Department of Education, plans to offer short courses beginning this fall. Available balances in the various departments were used for the purpose. The University should have \$7,500 a year to provide for this work properly during the next three years.

THE GEOLOGICAL SURVEY

This important State project heretofore conducted as a separate branch of the State service was, under the Reorganization Act, placed under the Board of Regents of the University. The work that this organization has accomplished is of very great value to the State and to the nation. The geological, mineral and soil resources of the State have been studied and mapped. The topographical surveys are largely completed on which our road and drainage systems are based. Clay, marl, sand and other deposits of great value are being located and the manner in which they should be utilized shown. No work is yielding a larger return for the money expended. The amount now available is \$18,875. The amount requested for the next three years will be approximately the same—\$20,675.

THE WEATHER SERVICE

The Maryland Weather Service was also assigned to the Board of Regents of the University and is conducted in co-operation with the U. S. Weather Bureau under the administrative control of the Director of the State Geological Survey. The amount of money available for this purpose is \$2,510. This could profitably be increased for the purpose of preparation and publication of reports that would be of value to the agricultural and other industries of the State.

THE DEPARTMENT OF FORESTRY

This department, formerly a separate branch of the State Government was, under the Reorganization Act, consolidated with the University. This relates to one of the great undeveloped resources of the State and has a bearing on many other basic industries such as agriculture, water resources, game and fish recreation, and all the wood using manufacturing enterprises. The development of these resources stands on a par with agriculture. All of the progressive States are adopting the policy of State forests along the important stream sources. Maryland has begun on this policy and should extend it as rapidly as possible. It is recommended that an item be provided in the bond issue for this investment. It is highly essential that provision be made for more adequate fire protection. The large losses this year might have been greatly lessened or prevented altogether if a more adequate fire patrol could have been maintained. It is also desirable to increase the forest nurseries so that young trees for replanting cut-over or burned-over areas may be readily available. This department is asking for an increase from \$29,175 to \$58,035 for 1925; \$51,900 for 1926, and \$53,755 for 1927.

THE EASTERN BRANCH

When the State accepted the Land-Grant Act of 1862 and the subsequent Morrill and Nelson Acts making funds available for the teaching of agriculture and the mechanic arts, an obligation was assumed of providing equivalent instruction for the white and colored races. The work for the colored students was placed at Princess Anne, Maryland, in co-operation with Morgan College. The State provides, in addition to the \$10,000 from the Morrill Fund, \$18,120 a year for maintenance. The State also purchased about 70 acres of land with house and barn and a temporary portable class room building costing about \$3,000. Morgan College furnishes about 100 acres of land with barn, chicken houses, hog house, dining hall, superintendent's quarters and dormitories for about 250 students. There is urgently needed additional land which can now be secured adjoining for about \$20,000, a laboratory and class room building which will cost, with equipment, \$95,000; a dormitory for boys costing \$60,000; home economics building, \$11,000; three teachers' cottages, \$12,000, and other minor improvements aggregating \$192,000. Additional support funds of \$18,410 are requested, making a total for support of \$36,550. Everything possible should be done to improve the condition of our colored farmers and farm homes. This school is one of the most effective agencies to that end. All the Southern States are forging ahead in this work.

The State's investment in education, like its investment in good roads and sanitation, yields constantly increasing returns in satisfaction and contentment of its citizens, the development and conservation of its resources and the building of a better civilization for its children.

A. F. WOODS,
President.

The College of Agriculture

P. W. ZIMMERMAN, *Dean.*

The College of Agriculture is trying year after year to equip itself in such a way that the students who take advantage of the training offered may have a complete and generous education which fits the man to perform, justly and skilfully, all the offices of private and public life. The faculty members believe that, when properly taught, there is science and culture in agriculture as well as in the so-called humanitarian subjects. They do not overlook the fact, however, that all graduates of the College of Agriculture must be familiar with agricultural industrial conditions, and that each must be prepared for one of the agricultural vocations.

Those who return to farms should be model farmers in their communities. Their liberal and vocational education should enable them to compete favorably for community honors with any of the citizens, whether trained in the Arts and Sciences or for vocations.

About half of our graduates return to their farms; the remainder go into commercial or professional work, usually closely connected with agriculture. The statement has been made that not enough of our graduates return to the farm. Not all of them do return to the farm, and, we believe, fortunately so. We are constantly in need, in Maryland and other States, of county agents and agricultural leaders who are trained according to the ideals of our college. Agriculture is constantly changing. No cropping system can be worked out once and for all times; new pests and diseases must be constantly combatted; and, if agriculture maintains itself with other industries, more efficient marketing methods must be put into operation. To bring about the desired results, we must have some men well trained in agriculture who do not wish to return to the farm. Fortunately, we have some who were well adapted to agricultural work, but are willing to spend their time advising and teaching others. The demand for this type of work is keen at present. We have had calls for many more such men than we can supply.

The statistics from other States of the Union show that enrollment in agricultural colleges is not as large now as previously. This condition is doubtless due to the wide publicity given to the temporary lack of prosperity in agriculture. Since agriculture is the primary pursuit of the human race, and since permanent prosperity is in direct proportion to the producing capacity of the land, we believe that as soon as business has time to adjust itself agriculture will

again become profitable. Maryland is somewhat more fortunate than some of her neighbors in that instead of falling off in enrollment she has just about held her high mark position established three years ago.

DEPARTMENTS

The College of Agriculture includes the following departments: (1) Agronomy (including Forage Crops, Grain Crops, Genetics); (2) Agricultural Engineering; (3) Animal Husbandry; (4) Bacteriology and Sanitation; (5) Dairy Husbandry; (6) Entomolgy and Bee Culture; (7) Farm Forestry; (8) Farm Management and Agricultural Economics; (9) Horticulture (including Pomology, Vegetable Gardening, Landscape Gardening and Floriculture); (10) Plant Pathology; (11) Plant Physiology and Bio-chemistry; (12) Poultry Husbandry; (13) Soils; (14) Veterinary Medicine.

In order to give an idea of progress and needs in various departments, the following summary from the various heads is offered:

DEPARTMENT OF AGRONOMY

J. E. METZGER, *Head of Department.*

The Department of Agronomy now offers fifteen courses for Undergraduate and Graduate students, two courses for sub-collegiate students, and one special course for teachers in summer school work. Nine of these courses pertain directly to production and quality determination of farm crops, six of them are devoted to studies in inheritance and breeding, and three of them partake of work in special problems.

There are at present three instructors available for this work. One of them is employed for full-time and the other two for part-time work. The organization of the work in the department has been a matter of special concern during the past two years. Revised and complete outlines of the subject-matter have been prepared, and more than usual attention has been given to the teaching methods employed. The policy of adding new units of equipment which are in keeping with former purchases, and which add to the completeness of a well-equipped department, has been followed during the biennium.

In the three years since 1920 the enrollment of the students doing work in Agronomy has increased at the rate of fifty per cent annually. As many as six laboratory courses are now being given in one room—a room which is barely ample to accomodate the work in Crop Production. The immediate needs in this respect are: First, an additional room for the work in grain, hay grading; Second, a room for equipment and student work in genetics. This room could be used also by advanced students; Third, beginning in 1924, an additional instructor will be required.

DEPARTMENT OF AGRICULTURAL ENGINEERING

RAY W. CARPENTER, *Head of Department.*

The enrollment in the courses offered by the Department of Agricultural Engineering has shown a steady growth during the past two years. At the present time thirty-eight juniors and seniors are taking work in this department.

The plans for the coming triennium depend very materially upon the amount of laboratory space which will be available. This department has always based its plans upon the belief that the entire central position of the north wing of the Agricultural Building would some day be turned over to it. When this is done laboratory exercises in woodwork, forge work and cement making will be offered. The course in farm machinery will be greatly improved by opportunity to show more machines to better advantage.

It is planned to bring the course in gasoline engines and automobiles to the attention of Arts and Science students as an elective subject. Already several students of this college have expressed their intention to take this course during the next semester.

In order to develop this program, and to take care of the growing demand for Extension work, it is desirable that an assistant professor in agricultural engineering be added to the staff. New equipment would cost about \$750, and an annual budget of \$750 would be required for maintenance.

DEPARTMENT OF ANIMAL HUSBANDRY

DEVÖE MEADE, *Head of Department.*

No marked changes have been made during the past two years in the character of work offered in the various courses of the department. One course, Meat and Meat Products, is being offered this year for the first time. This course is being well received and is meeting a need which has been felt for some time. A continuous effort has been put forth to so organize and so present the work of the department as to develop men who are thoroughly trained both in the science and in the art of livestock husbandry.

Members of the department staff have acted in the capacity of official judges of livestock at several county fairs and community exhibits during the past two years. In response to calls for speakers on subjects relative to Animal Husbandry, which requests have been received from different sections of the State, the department has, wherever possible, provided speakers for the occasion.

Assistance has been rendered by the department to county agents in aiding them in coaching their boys' dairy cattle judging teams, and by rendering assistance in coaching the two boys' judging teams which have gone to Europe during the past two years and returned as international champions.

Looking ahead and planning for the future development of the department, it would appear that the first and paramount need of the department is for additional land . It is apparent that no permanent and substantial livestock buildings can be erected, or livestock purchased until land (either by purchase or long-time lease) has been provided for the use of the department.

Next to land the most pressing needs of the department are for buildings to house livestock, and for an increase in the number, kind and quality of livestock maintained.

The Department of Animal Husbandry has not been able in the past, due to a lack of livestock and equipment, to give sufficient attention and effort to advanced undergraduate, graduate, and research work. This condition is recognized and it is hoped that the situation may be remedied during the next triennium. To this end it is planned, in addition to the securing of land, construction of buildings for the housing of livestock, and the purchasing of livestock, to provide and equip laboratories with apparatus and supplies which will permit of carrying on technical research work in Animal Nutrition, Animal Breeding and Genetics, and Pedigree Studies. Much of the work in Nutrition and Genetics is of such a highly technical nature that it must be carried out in properly equipped laboratories under controlled conditions. Such laboratories are necessary in order to investigate problems which cannot be carried out under field conditions, and to supplement with more exact data the broader and more general work done in the field. The present staff is inadequate to sustain the additional load which will devolve upon it as a result of the necessary contemplated expansion. Provision should, therefore, be made in the next budget for an additional assistant professor, an instructor and a superintendent of livestock.

The following is a summary of the purposes for which money is needed:

Office supplies and travel; buildings for livestock with necessary equipment for hogs, beef cattle, sheep, and for horses; for the purchase of livestock (beef cattle and steers, sheep, swine and horses); nutrition laboratory, equipment, materials, slaughtering and meat laboratory; judging pavilion; general livestock maintenance and operating fund; land and improvements.

Approximately \$50,000 will be required during each year of the next triennium to purchase land and livestock, to erect suitable buildings, construct and equip laboratories to place the Animal Husbandry Department of the University of Maryland upon a basis which the importance of the livestock interests in the State justify, and upon a par with similar departments in other leading State colleges and universities.

DEPARTMENT OF BACTERIOLOGY AND SANITATION

E. M. PICKENS, *Head of Department.*

The present organization of this department was brought about with three main purposes in view. The first is to give all the students of the University an opportunity to obtain a general knowledge of the subject. This is of prime importance, as Bacteriology at the present time is becoming a basic subject and will soon be of as much fundamental importance as Physics or Chemistry.

The second purpose, and the one for which this curriculum was largely designed, is to fit students for positions along bacteriological lines, and thus make for the State, better doctors, sanitarians, and citizens. The application of this training to plant and animal production is not only curtailing the losses sustained, but is steadily improving the types and qualities of the products. Men are at present being fitted for positions as dairy bacteriologists and inspectors, soil bacteriologists, Federal, State and municipal bacteriologists, research bacteriologists, commercial bacteriologists, etc. The demand for individuals qualified along these lines is much greater than the supply, and with the development of the field, this condition is bound to exist for some time to come.

The third purpose is to render as much assistance as possible to the citizens of the State. This work in the past has consisted largely in the laboratory diagnosis of the infectious diseases of man. The principal maladies examined for have been tuberculosis, typhoid fever and diphtheria. Numerous samples of water and milk have also been analyzed without charge.

Teaching—The subjects offered for instruction have been General Bacteriology, Dairy Bacteriology, Advanced Bacteriology, Hematology, Urinalysis, Thesis, and Seminar for the undergraduates; Research Bacteriology for the graduate students, and a special course in Agricultural Bacteriology for the trainees of the Veterans' Bureau.

The demand for these courses has been increasing rapidly each year. The number of students given instruction in the department in the different courses during the year 1921-22 was 149. During the year 1922-23 this number was raised to 213, or an increase of 64 students.

Inasmuch as courses are offered here at the University in Plant Physiology and Animal Physiology, it would seem that one should be available in the human branch of the subject. The subject-matter for such a course should be somewhat more elementary than that given in the medical colleges, and should lay special emphasis on hygiene.

Publications—Unfortunately, our routine work has increased to such an extent that it has become necessary to restrict our research work practically to that carried on by the graduate students. As it has been impossible to add to our staff to keep pace with the increase in

students, we have had no alternative in the matter. This, of course, precludes the possibility of publications. We have succeeded, however, in completing a piece of work on the Standardization of Fuchsin for the American Bacteriological Society. The work was published by this Society and distributed in bulletin form. A review of a text book, Jordan's "Bacteriology," was also published in a scientific journal.

Needs of the Department—The annual request for the next triennium specifies an increase of \$7,410. This increase is made necessary by a twenty per cent annual increase in the number of students taking subjects in this department for the past five years. The subjects being taught, due to their nature, must be given largely as laboratory instead of lecture work. This requires the maximum of personal supervision, as a great many of the bacteria handled in the laboratory are pathogenic. A large amount of costly apparatus and chemicals are also necessary for the proper teaching of these courses.

An additional man must be procured for the department, or the same conditions which we are now facing will obtain again next year, viz., that we will be forced to restrict the number of students taking courses in this department to the capacity of our staff and equipment. Such a procedure should be employed only as a last resort. All students who need these subjects in fitting themselves for their life work should have an opportunity to pursue them. Furthermore, under present conditions the department staff does not have sufficient time to carry on any research work. This is essential for the teacher to keep him up to date in his subject, and to supply enthusiasm for the benefit of the classes he instructs.

DEPARTMENT OF DAIRY HUSBANDRY

J. A. GAMBLE, *Head of Department.*

The past two years have been a period of expansion and growth for this department. The courses in dairy production, analysis of dairy products and in the marketing of the same have been expanded to meet the needs of the situation. The aim of the department is to so organize the different courses that the student taking them will, after graduation, be able to render an immediate and constantly increasing service to this industry.

The dairy short courses were reintroduced last year and a most successful three weeks' school held during January. The subject-matter in these courses is entirely practical and consists of work in the testing laboratories and with the herd. The purpose of these courses is to supply busy farm boys who cannot get away for longer courses, with information pertaining to the feeding, breeding, selection and management of dairy cows, to furnish cow testers for association work and to provide men for receiving stations, milk plants and creameries.

There has been a steady increase in the number of students majoring in the regular courses and no little enthusiasm among the seniors and graduate students in dairy husbandry for the work. At the present time approximately twenty juniors are majoring in this department. The dairy cattle fitting contest, the milk production contest and the competition for the dairy cattle and dairy products judging teams representing the University have had the enthusiastic support of the students.

The development of graduate instruction has brought new problems to us. There is at the present time an urgent call for this work from the graduates of this institution and other colleges. During each of the past two years the department has had six graduate students working for Masters degrees. The proximity of the institution to the libraries and laboratories in Washington, D. C., offer a splendid opportunity for such work.

Graduates of the department have been readily absorbed by the industry in good positions, paying good salaries. The demand for well-trained men at the present time exceeds the supply.

Future Plans—The last legislature provided funds for the erection of a dairy husbandry building in which the course work may be still further perfected and the field of usefulness of the department expanded. The building has brought new opportunities for service and new responsibilities. At the present time milk surplusses are piling up in different parts of the State. Over 20,000 gallons of milk more than is absorbed in the fluid state is now being produced. Receiving stations are being built in new localities and many carloads of dairy cattle shipped in from the north and west. All this points to an increased interest in dairy husbandry in Maryland and without question means creameries, condensers and cheese factories. With this in mind, it is apparent that the Department should at the earliest possible moment begin to turn out men trained in converting this surplus milk into the butter and cheese now consumed by our people but produced largely in the Middle West.

In order that our students may have as valuable experience as possible while here, it is planned to handle a large volume of product through the new building. In disposing of this, the effort will be to develop our marketing courses and the marketing end of the enterprise. This of course calls for increased operating funds and personnel.

At the present time our herds of Guernseys and Ayrshires are fairly well developed from the production standpoint. However, there is some work yet to be done in unifying the type and increasing the size of the average individual in the herd. In addition, we should have for student instruction good individuals of the Jersey and Holstein breeds.

DEPARTMENT OF ENTOMOLOGY

E. N. CORY, *Head of Department.*

The combination of duties under which the head of the department works, as Professor of Entomology, State and Station Entomologist and Extension Specialist in Entomology, while making a division of time necessary, insures that the students receive the latest developments in their science, and get personal contact and practical experience with the problems of the State. We feel that it is largely due to this that the graduates in entomology have been uniformly successful in State and governmental work. The policy of encouraging only students with a special aptitude for the work has been adhered to for many years, and so no difficulty has ever been experienced in placing graduates.

In addition to this special work in entomology, general courses are given each year to the agricultural students and special courses to the horticultural men. Beekeeping, especially for the rehabilitation of ex-service men, has met with marked success. Maryland offers splendid opportunity for beekeepers to realize large returns upon the investment of a relatively small capital. Approximately one hundred and twenty ex-service men have been given laboratory and practical experience in beekeeping, together with project work in many cases, on the trainee's farm.

The demand for graduate work in entomology is developing steadily. Six graduates are now enrolled in entomology. Six other working entomologists have signified their intention to register for advanced degrees. It is felt that this class of teaching should be fostered as much as possible, but with the limited force no effort can be made to encourage the registration of graduates.

The plans for the next triennium are dependent in a large measure upon allocation of the funds to the State Horticultural Department, and to a less degree to the Experiment Station. Sufficient funds in the former department will permit of the employment of assistants, especially a deputy to have complete charge of the regulatory functions, thus relieving the head of the department and enabling him to devote more time to teaching. Enlargement of the scope of the undergraduate instruction in entomology and beekeeping, both on the campus and out in the State, is contemplated. In economic entomology this will take the form of additional courses in morphology, especially of immature forms, taxonomy, ecology and nature study, the latter to be extended to the rural schools.

Beekeeping courses, both on and off the campus, should be extended greatly.

The graduate work, both as minor work for specialists in entomology and as minor work for graduates in other departments, must be enlarged.

To meet the demands of the department, additional funds for instruction, equipment and housing facilities, including a separate bee-keeping building, should be allowed.

FARM FORESTRY

F. W. BESLEY, *Head of Department.*

Previous to 1923 the Department of Forestry offered only one course, and that to the students in agriculture as an auxiliary course acquainting the students with the uses to which forest materials could be put, and the management of farm wood lots. Recently the President and the Board of Regents have seen fit to recommend that a major course in farm forestry be included, having in mind constantly that the course is not to duplicate efforts in many of the other institutions where special courses in forestry train students to become State foresters. Farm forestry, therefore, is designed to furnish instruction to students in the College of Agriculture who wish to specialize in farm forestry. In the eastern third of the United States the woodland on farms constitutes thirty-seven per cent of the total farm acreage, while the improved land on farms constitutes fifty-two per cent, the remaining eleven per cent is largely waste land, unsuited for field crops, that should be planted in timber crops to make it productive. Farm forestry is therefore of vital importance in the conduct of farm operations. The field for graduates in this course might properly include:

1. Managers of large tracts or estates principally woodland, but partly devoted to growing field crops.
2. County agents, or teachers of agriculture in sections consisting largely of forest land.
3. Farm managers where woodlands constitute a considerable part of the farm acreage.
4. An undergraduate training in forestry that will give advanced standing in a graduate forestry school.

If the request for ground, building and equipment is looked upon favorably by the legislature, the department should make considerable progress within the next three years.

DEPARTMENT OF FARM MANAGEMENT AND AGRICULTURAL ECONOMICS

W. T. L. TALIAFERRO, *Head of Department.*

The Department of Farm Management and Agricultural Economics as at present organized is divided into two divisions, the first embracing technical farm management and farm accounting, the second as indicated in the title, taking in the broader field of agricultural economics.

The farm management course is designed to take the student of agriculture in his senior year and aid him in properly correlating the work of the several technical courses with which he has become familiar and to adapt the work of all to his own needs in the prosecution of farming as a successful business enterprise on his own land or that of another, or to prosecute the subject still further as an original investigator.

Today, as never before, the success of the individual farmer depends upon his association with, and reactions toward those engaged in like pursuits with himself, and also those in other lines of business dependent upon or more remotely related to his own.

Upon these associations and reactions depends the fact whether he shall find in the community at large wasteful competition and grinding adverse interests or an intelligent and cordial responsiveness and co-operation in the pursuit of the common welfare. This is the field of agricultural economics, and its close necessary association with individual farm management is apparent at a glance.

A considerable part of the time of the Professor of Farm Management is devoted to extension work, especially in the line of assisting farmers to solve their individual problems, there being a considerable demand for work of this character. The solution of their problems serves also as the subject of seminars with the class in farm management.

AGRICULTURAL ECONOMICS

Prior to August, 1922, when the present Professor of Agricultural Economics came to the University, no courses in Agricultural Economics were given in this institution, except such courses as were offered in the College of Arts and Sciences. The Professor of Agricultural Economics devotes about two-thirds of his time to teaching courses in this subject in the College of Agriculture, and about one-third of his time to Extension Work in marketing. The Extension Work is investigational in nature and most of it can be done during the summer months.

The work in Agricultural Economics consists of lectures, investigation and written reports. It is the aim of the instructor to acquaint the students with the fundamental principles underlying production, distribution and consumption, more especially as they bear upon agricultural conditions, and to guide them in the correct methods of collecting, analyzing and interpreting statistical data in their relation to Agricultural Economics.

During the college year 1922-1923, the first year Agricultural Economics was offered, there were enrolled in the various courses in Agricultural Economics 101 students. This was rather a large number of students for the first year, especially considering that the course in this subject was open to juniors and seniors only.

Needs of the Department—The present teaching force in Agricultural Economics includes one instructor, S. H. DeVault. On account of the growing importance of this subject, and the large number of students now enrolled in the department, there is need for the addition of another instructor to the teaching force. A graduate fellowship should be established in the department so as to make it possible to do more investigation work, which is needed so much at the present time. The present Professor of Agricultural Economics should devote his entire time to teaching, with the summers free, perhaps, to do investigational and research work.

New courses of graduate rank should be added to the curricula so that it would be possible to give adequate training for an advanced degree. At the present time several students are majoring in Agricultural Economics and the demand for advanced courses for graduate students is increasing rapidly.

A stenographer should be employed whose services would be available for the Department of Farm Management and Agricultural Economics. The correspondence of these departments is unusually heavy.

DEPARTMENT OF HORTICULTURE

E. C. AUCHTER, *Head of Department.*

There has been a slow but progressive development in the work of the Department of Horticulture during the past two years. We have given instruction to a much larger group of undergraduates than during the previous biennium. All of our graduates have been in demand immediately upon graduation.

The student gardens are being successfully carried on, and now, at the end of three years, we are preparing a report of the gardens for publication. We find that it is a good idea to assign students in all branches of Horticulture to certain plots of ground, rows of trees, or benches in greenhouses as a part of their laboratory work. This arouses more interest in the work than if all the students worked together on a single plot.

The landscape gardening division of the department has given a good deal of time to beautifying the campus by means of planting shrubbery, putting in new walks, developing a perennial flower garden and by carrying on the dahlia garden.

The floricultural division staged a very successful flower show last fall. At this show many of the florists of the cities of Washington and Baltimore were present and apparently gave aid and received benefit.

Three members of the department have spent full time in giving instruction to Federal Board men. Many of these men have now purchased farms and are operating them successfully. Other Federal Board men are being trained in the greenhouses under the

supervision of Mr. Blandford, and are becoming good greenhouse and practical landscape men. One Federal Board man has recently become a manager of a rich man's estate at a salary of \$1,800 and concessions of considerable importance.

A fruit judging team, made up of juniors and seniors, was developed in this department last year, which took second place in the Eastern Intercollegiate Fruit Judging Contest held at State College, Pennsylvania. One of our team won second highest individual honors of all contestants entered.

As a whole, the gardens, orchards and greenhouses have improved in general appearance and in crops produced. This has been reflected in the increased sales turned in to the treasurer's office.

A general horticultural nursery is grown under the supervision of the department. From this nursery many of the ornamental plants and fruit plants which are planted about the campus and orchards are grown. In addition, certain shrubbery can be sent out to high schools and other graded schools in the State in an effort to help beautify their surroundings.

Graduate Students—There has been a healthy demand for graduate work in this department during the past two years. During this time eight students have registered for graduate work. In June, 1923, three men received the Degree of Master of Science. This coming June, 1924, three more men will be eligible for a Degree of Master of Science. Several other men are registered for the Doctor's Degree. These students come to us from widely scattered States, such as Wisconsin, Missouri, New Hampshire, West Virginia and New York, showing that our graduate work is being recognized in other States. During the past year applications have been received from eighteen men wishing to get graduate work in this department.

Conference of University Horticulturists Held in Maryland—During September, 1923, the Horticulturists of West Virginia, Delaware, Virginia, Pennsylvania, Wisconsin and New York visited the experimental work of this department in order to inspect the biennial bearing studies being carried on. This gave the juniors and seniors of this institution an opportunity to become acquainted with the Horticulturists of other States.

Plans for the Next Triennium—In order to successfully take care of the increased demands which are being made of this department, it is imperative that we have another range of greenhouses. Much of the instructional work which we would like to give cannot be carried on because of the lack of space.

We are also anxious to put up a model packing house in which we can demonstrate to the fruit growers of the State the best methods in packing-house management as well as the proper packing of fruit.

The horticultural interests in this State have become so large that attention should be given to bi-products work. It is hoped to have a

fruit and vegetable bi-products division in this department so that high-grade instruction can be given in this work. The canning industry in this State demands that investigational work be carried along these lines also. More attention should be given to the subject of small fruits. The industry has reached quite large proportions on the Eastern Shore of Maryland, as well as the Western part of Maryland. One full-time man should be allotted to this branch of the work.

New Buildings—The Department of Horticulture is seriously cramped for the lack of class rooms, offices and research laboratories. There is a great need for cold-storage rooms for the proper keeping of fruits and vegetables. We hope that a new horticultural building will be granted for the department's use. In addition to the offices, class rooms, storage rooms, etc., it will be possible to develop a well-organized sales room for horticultural products in this building. The increased number of students, and our present lack of facilities to properly handle them, makes the need for such a building imperative.

DEPARTMENT OF PLANT PATHOLOGY

C. E. TEMPLE, *Head of Department.*

During the past three years the number of credit hours taught per year has increased from 129 to 233 in Plant Pathology and from 413 to 690 in general botany, or an increase of 80 per cent and 66 per cent, respectively. Included in these figures are 26 graduate credits three years ago as compared to 72 graduate credits last year, or an increase in three years of 174 per cent in the amount of graduate instruction in Plant Pathology.

Since the courses in Botany and Plant Pathology require laboratory work, and since the number of students in each of the Pathology courses is small, the amount of teaching is relatively large as compared to a like number of credits taught in literary courses. Then, too, there is only one laboratory equipped for the use of students in General Botany, in Plant Pathology, and in Undergraduate Plant Physiology. Another laboratory is being equipped for Plant Pathology, but at least \$2,000 will be needed to equip it for first-class undergraduate and graduate instruction.

If the rate of growth of the past three years is maintained through the next triennium, as we have every reason to believe that it will be, the number of credit hours to be taught will be approximately double that of the present time. Then, too, a few courses not provided for now should be given to round out the training offered by the department. If this means anything, it means that more laboratory facilities and more instructors must be added to the present outlay to maintain and improve our present standards of instruction.

Recommendations—1. That provision be made to group all of the workers in Plant Pathology in the same building with adjacent offices, laboratories and class rooms. 2. That the teaching of General Botany

remain in the College of Agriculture because—(a) It is more economical from a financial standpoint; (b) it is foundational and prerequisite to the courses in all of the departments of the College of Agriculture; (c) the faculty of the College of Agriculture is in closer touch with crop production, and, therefore, better able to stimulate interest in Botany through its application, but still without any loss of cultural value on account of this; and, finally, (d) agricultural students have an aversion to the taking of required cultural courses in other colleges than Agriculture. (3) That ample funds be provided, (a) to secure an additional instructor in case the teaching of General Botany is continued in the Department of Plant Pathology; (b) to equip a Pathological laboratory for both undergraduate and graduate students and for research; (c) to provide greenhouse space of approximately 600 square feet; (d) to permit of increases in salary in accordance with the training and experience of the instructors and the work accomplished by them, and in line with the general salary increases of the faculty; and, (e) to maintain all of these, as well as the present staff and equipment, through the triennium.

DEPARTMENT OF PLANT PHYSIOLOGY AND BIOCHEMISTRY

C. O. APPLEMAN, *Head of Department.*

Plant life furnishes the ultimate source of food for both man and beast, as well as contributing largely to shelter and clothing. Animal life on the earth would be impossible if it were not for the wonderful capacity of green plants to utilize the energy of the sun for building up organic food materials from carbon dioxide and water. Therefore, the fundamental problems concerning the nutrition, growth and reproduction of the living plant are of first importance in plant production.

The undergraduate instruction in Plant Physiology aims not only to impart the known scientific facts of the science but also to awaken in the student a lasting interest and spirit of inquiry regarding the fundamental problems of plant life. The elementary courses are essential to the basic training of agricultural students specializing in the sciences concerned with the production of special crops.

The department offers several advanced courses intended primarily for graduate students. The aim in these courses is to familiarize the students with the advanced literature of the subject and with the methods and technique of research in this field. Since these courses are also logical minors for graduate students specializing in horticulture, agronomy, soils, plant pathology, bacteriology, etc., the demands from these students have greatly exceeded the space and equipment available. For this reason, it became necessary this year to make the courses in general biochemistry exclusively graduate courses, although they are of fundamental importance to advanced undergraduate students interested in the several branches of biology. The proposed new chemical and science building will relieve this situation.

The major research projects now engaging the attention of the members of the staff are in the Experiment Station. A detailed account of these problems and the results accomplished, may be found in the report of the Director. In general, the research activities are concerned with the great economic problems of food supply and may be grouped under the following headings:

1. Fundamental problems of plant nutrition and growth.
2. Physiological aspects of plant diseases and immunity to disease.
3. The fundamental problems of hardiness in fruit buds and stems.
4. Conservation of plant food products during storage and transportation.
5. Physiological and biochemical problems of importance to the canning industry of the State.

Twenty-three publications have gone out from the department since the last biennial report was made.

DEPARTMENT OF POULTRY HUSBANDRY

ROY H. WAITE, *Head of Department.*

Owing to the limited funds at present available for use in the Poultry Department, we are not equipped to make adequate report of the activities during the past two years. We have made special effort to teach sound principles and to utilize our limited equipment in demonstrating the activities of poultry culture to best advantage.

During the past two years the department has given instruction in farm poultry to forty regularly enrolled students, and special vocational instruction to one hundred and twenty Veterans' Bureau students.

If we are to give proper instruction by example, demonstration and practice, we must have an appropriation of at least \$35,000 for a plant and maintenance the first year. A plant of sufficient size can be put up for this sum so that it will be practically self-supporting from the income.

DEPARTMENT OF SOILS

A. G. MCCALL, *Head of Department.*

Because of the numerous changes in the curricula and the shift from the three-term to the semester basis, it is difficult to give a tabular statistical statement that will show the development of the work in the Soils Department during the past biennium.

As compared with 1921-22, the enrollment in the elementary required courses in soils has increased approximately 70 per cent. A better index of the success of the soils work, however, is the marked increase in the number of students taking the advanced elective courses and the graduate work offered by the department. Two years ago

there were no students taking the soils curriculum, while at the present time seven undergraduate students are specializing in soils. In the graduate work we have two students who are candidates for the Master's Degree and three pursuing work for the Ph. D. Degree.

The present enrollment is taxing the capacity of the department, and there is every reason to believe that there will be substantial increase in the enrollment in the elective as well as the required work during the next triennium.

It is impossible to make definite plans for this period until the legislative appropriations are made, but I look forward to either occupying the entire basement of the present Administration Building or the entire Chemistry Building if a new Science Hall is provided by the legislature. In either event a considerable sum will be required for equipment and additional teaching force. In the matter of equipment our most pressing need is for a greenhouse for the use of both undergraduate and graduate students. Without greenhouse facilities the soils work cannot be made attractive and effective.

While I realize the obligation of taking care of the undergraduate work, I also feel that nowhere in the country can be found more favorable conditions for the encouragement and development of graduate work in soils.

DEPARTMENT OF VETERINARY MEDICINE

R. C. REED, *Head of Department.*

During the biennium the work of this department has been modified so that it includes not only teaching anatomy and physiology, and animal diseases to agricultural students, but in addition a research course in genital diseases of domestic animals. The project requires much field work in the study of herd conditions, and lays special emphasis on the study of the causes of sterility and abortion, and the means of prevention and cure of these diseases.

In order to obtain the best results, it will be necessary to do more laboratory work in connection with the field investigations. For this purpose a small laboratory must be provided and properly equipped. This will require at least one assistant who shall be a graduate of a reputable veterinary college, with some experience along these lines.

If an effective campaign is to be carried out under this project, it will be necessary to have more funds which shall be appropriated for the work so that it shall become an integral part of the University instead of being largely supported by outside funds, as at present.

Further, it is planned to make this one of the major research projects for veterinary graduates who are working for advanced degrees, hence the need for funds, laboratory and assistance in both field and laboratory investigation.

During the biennium, in addition to the routine duties of the department, a large number of conferences in connection with the various

phases of the work have been attended, as well as a number of meetings of National and State scientific associations, such as the American Veterinary Medical Association, United States Live Stock Sanitary Association and the State Veterinary Associations.

Many field investigation trips have been made and about 250 premises visited.

Over 2,000 animals have been examined, or treated, and advice given regarding the conditions found.

Species of animals seen include cattle, horses, mules, sheep, swine, cats, dogs and poultry.

Diseases investigated include diseases incidental to breeding, such as abortion, sterility, metritis, dystokia, parturient paresis, calf scours, calf pneumonia, orchitis, etc. Other diseases investigated include hog cholera, actinomycosis, rabies, anthrax, hemorrhagic septicemia, forage poisoning, foul foot; poultry troubles, impaction, black leg, laryngitis, mammitis and Johne's Disease.

While the time has been too short to report definite results and to draw conclusions regarding the major project, abortion and sterility, preliminary surveys indicate that the actual returns to livestock owners in the way of increased production of offspring, as well as milk, are many times the amount expended in the work. A continuation of the project for the next triennium should give results upon which can be based actual figures showing the relation between the expenditures and the returns.

The College of Arts and Sciences

*The President of the University,
College Park, Md.*

Sir: The College of Arts and Sciences provides for the students of Maryland and adjacent districts four years of liberal training in biological sciences, economics and business administration, history, languages and literatures, mathematics, philosophy, physical sciences, political science, psychology and sociology. It thus affords the student an opportunity to acquire a general education which shall serve as a foundation for success in whatever profession or vocation he may choose. It particularly prepares the way and lays the foundation for the learned professions of law, medicine, theology, teaching and even for the more technical professions of engineering, public health service and business administration.

This College is an outgrowth of the Division of Language and Literature of Maryland State College, and later, of the School of Liberal Arts of the University. In 1921 the School of Liberal Arts and the School of Chemistry were combined, and other physical and biological sciences were brought into the newly formed College of Arts and Sciences, thus making it a complete College of Arts and Sciences. The aim during the past biennium has been to completely standardize its departments and courses in order that it might meet the requirements of the standardizing agencies of the country.

The change from the term to the semester basis during the past year has made possible the adoption of the minimum standard requirement for graduation from such colleges of 120 semester hours of basic courses, in addition to Military Science or Physical Education. The degrees granted in this College are the degrees of Bachelor of Arts and Bachelor of Science.

During the biennium the various groups and departments of the College were extensively reorganized in order to broaden and amplify the courses of instruction offered. Eight major groups were adopted, in addition to the Pre-Medical Curriculum and a Miscellaneous Group made up of work from other colleges and departments. Under these major groups some fifteen departments are organized and are functioning. Other essential departments are in embryo and it is our urgent desire to open work in these departments at the beginning of the next triennium under an adequate instructional force.

The enrollment in this College has shown remarkable progress. Organized as a School of Liberal Arts four years ago, it had an en-

rollment of 95 students for its first year. At the beginning of its fifth year its enrollment is at present approximately 290 which will doubtless go to around 300 for the year.

Recent compilations of percentages and figures show that this College furnishes over 65 per cent of the instruction of the entire institution at College Park. In addition, it provides for the Arts and Science courses in the professional Schools of Dentistry and Pharmacy at Baltimore, giving instruction in these Schools in Chemistry, Physics, Mathematics, English and German. Its dean is also Advisory Dean of the newly formed College of Commerce and Business Administration in Baltimore, and several of its instructors assist in the work of the basic courses in the latter College.

Hence, a substantial increase in the teaching staff of this College is a paramount necessity. Such basic courses as English, Modern Languages, History, Economics, etc., should be taught in small sections of not to exceed thirty students in any section. Ten sections of Freshman English had to be provided for this year and such sectioning should be more complete and thorough in several subjects. To provide for this an increase in staff is a vital necessity.

A need of this College which is almost equally urgent is for more class-room space and more office space for administration and for the various departments. The completion of the proposed Science Building and the new Administration Building in the near future would meet this need for the present. This College would be largely housed in the proposed new Administration Building, according to present plans. Attempts have recently been made to organize new sections of courses to meet the needs of additional students and it was found, for instance, that at the 11:20 period on any day of the week, not a single class room was available in the whole University. Such sections had to be abandoned. Certain lecture courses cannot be provided for other than in the Auditorium where they are now being held, but such a room is obviously not equipped for general class-room work.

The Pre-Medical Curriculum has been modified to meet more clearly the requirements of the American Medical Association. A Pre-Dental and Pre-Pharmaceutical course is being seriously considered. Already certain students are taking a Pre-Law course here and it is hoped that a combined Arts and Law course can soon be arranged.

A statement of the Financial Needs of this College appears elsewhere in this report.

The outstanding needs, therefore, are: 1. Substantial increase in teaching staff; 2. The early completion of the Science Building and Administration Building in order to supply adequate class-room facilities, and 3. Additional equipment for the various departments and particularly greater library facilities than are now available.

Respectfully submitted,

FREDERIC E. LEE, *Dean.*

The College of Commerce and Business Administration

*To the President, University of Maryland,
College Park, Md.*

Sir: In accordance with your request, I am pleased to submit the following report of the College of Commerce and Business Administration for the past biennium.

Historical—This college is the latest one to be organized in the University. In response to repeated requests from men and women in Baltimore, extension courses in advanced commercial subjects were opened in this city in the fall of 1921. These aimed to provide systematic instruction under University auspices to those who either were then engaged in or who expected to engage in business pursuits. At the time, no University nor College in the State offered instruction to prepare young men for the professions of Accountant, Banker, Real Estate Broker, etc. The public response was immediate. The demand for such courses of instruction was so great—very nearly six hundred students being enrolled in the academic year of 1922-23—that it was decided during last spring to create upon the foundation of these Extensions Courses a College of Commerce and Business Administration. This new department is affiliated with the College of Arts and Sciences. The dean of the latter is also serving as Advisory Dean of this College.

Courses of Study—A flexible program of studies has been arranged to serve the needs of all classes of students; those who desire only one or two subjects; those who are deficient in the entrance requirements but who are ambitious of improving their education in order to increase their prospects for promotion, and, finally, high-school graduates who want a degree attesting to their thorough preparation for business careers. Classes are conducted during the late afternoon and evening. Instruction is provided in the following general courses leading to the degree of Bachelor of Business Administration: Accounting, Business Administration, Banking and Investments, Foreign Trade and Commerce, and Real Estate and Insurance.

Registration—Approximately five hundred students are now in attendance. Since new classes will be organized for the second semester which will enable new students to enter at that time, the total registration for the season will probably number from six to seven hundred. A graduating class of twenty or twenty-five students is expected this year.

Financial—The department has been entirely self-supporting from the outset and has contributed also to the University overhead. To do this has required strict economy and even that was possible only because of the zeal of the instructors who, to prevent a deficit, have cheerfully served for half-salary. This year the income will be large enough to make this continued sacrifice unnecessary. The receipts will be approximately \$45,000, and the expenses as estimated will be \$43,000.

Employment—As an aid to the placement of students in satisfactory positions and to strengthen relations with employers, an employment and vocational bureau was organized last year. A trained psychologist, prepared to give psychological tests and vocational advice, was put in charge. During the year there have been 63 applicants for employment; 15 calls for men, and 9 positions filled. There were also 29 applicants for vocational guidance who were given tests and advice.

Needs—The most pressing need of the College is for a building suitably equipped to house this important and growing work. The classes are scattered. Use is made of the law, medical, dental and pharmacy buildings for evening classes. Other classes meet in rented rooms. Last year the instruction was given in nine different buildings, many of which are a considerable distance apart. This situation does not lead toward effective supervision nor administration. Compared with other universities, equipped with splendid facilities, conducting similar schools, our work is carried on at decided disadvantage. Yet no similar school has grown more rapidly than this one. It would indicate that with proper facilities the College would be very popular and would exercise a tremendous influence upon the commercial welfare of the City and State.

A library to be used by the students for reference and collateral reading is another pressing need. The Real Estate Board of Baltimore has donated the sum of two hundred dollars to aid in the purchase of such books as would be helpful to students of the Real Estate Course. Practical aid of this sort is much appreciated.

Future—It is expected that arrangements will be completed by next season for graduates of this and other collegiate institutions to matriculate and carry on the work for the advanced degree of Master of Business Administration. Opportunities for study and research in Retail Merchandising will probably be provided under subsidy of the Federal Government as provided for by the Smith-Hughes Act.

With the increase of the number of students, day instruction will be opened, the number of courses increased and the faculty augmented. The outlook for the College is decidedly favorable, for it is rendering good service to the young men and women of the city which will be appreciated more and more as the years pass.

Respectfully submitted,

M. A. CLEMENS, *Acting Dean.*

The College of Education

*The President of the University,
College Park, Md.*

Sir: Within the past decade Maryland, by a series of legislative enactments, following upon thorough investigation of facts and needs, has established its public school system upon a sound modern basis. It has reorganized the administrative machinery, set up practicable standards and emphasized the necessity of trained teachers. It is expanding its normal school facilities to take care of the preparation of teachers for the elementary schools. Through the College of Education in the University it has made a significant beginning in the preparation of high-school teachers, high-school principals, vocational teachers, supervisory and administrative officers; and in the field of educational research.

The College of Education as now constituted consists of an organization of the various activities of the University that have to do with the professional preparation of teachers. Its courses are planned to serve the following classes of students: (1) those preparing to teach agriculture, home economics, industrial subjects and the arts and sciences in high schools; (2) prospective high-school principals, educational supervisors and school administrators; (3) those preparing for educational work in the trades and industries; (4) county agents, home demonstrators, boys and girls club leaders and other extension workers; (5) students majoring in other lines who desire courses in education for their professional and informational value.

To meet these needs the College is organized into five functional divisions or departments: General Education; Arts and Sciences Education; Agricultural Education; Home Economics Education, and Industrial Education.

Actual experience in teaching under competent supervision is of basic importance in the preparation of teachers. As it was impracticable heretofore to establish a demonstration school on the campus, a co-operative arrangement was made with the educational authorities of Prince George's County in 1920 whereby the students preparing to teach get their experience in teaching under supervision of the College Instructors. At first only a small group of students preparing to teach vocational agriculture was involved. In 1922-23, there were fourteen student teachers representing preparation in agriculture, home economics and English. In the current year there are fifteen students representing in addition to the above-mentioned sub-

jects, history, mathematics and high-school science. Up to the present time the plan has proved satisfactory to both parties. It should continue to operate satisfactorily for the next two or three years at least. Whether it is permanently workable and desirable should be demonstrated within that period. There are two difficulties in the way of complete success. (1) The high school is more than two miles from the College. Students have to pay two car fares each way and then walk nearly a mile at each end. This levies an unfair tax, both in time and money, upon the students. If expeditious transportation can be furnished, this difficulty will be eliminated. (2) The second difficulty, inherent in the situation, is the dual administrative responsibility involved. This was negligible when only a handful of students and only one or two departments and instructors were concerned. With the increasing number of students, increasing variety of subjects and larger numbers of teachers, a complex administrative situation develops. The problem is not insoluble by any means, but the time and diplomacy required to operate effectively may be too high a price to pay for the obvious benefits of such an arrangement. The two considerations, supplemented by the fact that the training school is the very heart of a successful teacher-training program, may make it desirable and necessary to establish a University high school on the campus in the not distant future.

Within the past biennium the personnel of the College has been strengthened by the addition of a professor of education who also serves as Dean of the College and Director of the Summer School and one instructor in general education; and by the appointment under the co-operative arrangement with the Hyattsville High School of a full-time supervising teacher of English and history.

Progress in services rendered by the College of education since its beginning in 1917 is shown graphically by the following table.

Year	Enrollment			Degrees Conferred
	College	Extension Course	Summer School	
1918-19.....	14	.....	201	3
1919-20.....	37	.....	208	5
1920-21.....	39	.....	379	5
1921-22.....	63	34	446	8
1922-23.....	75	121	452	15

The present enrollment in the College is seventy-seven; the probable extension courses enrollment is in excess of one hundred fifty; the probable number of graduates, fifteen (not including three or four candidates for the Teachers' Diploma in the Arts and Sciences College).

The regular college enrollment is distributed as follows: Arts and Sciences Education, 37; Agricultural Education, 12; Home Economics, 28. In addition to these students regularly enrolled in the College

there are approximately twenty students from the other colleges who are taking the educational courses necessary to qualify them to teach in the high schools of the State.

The term general education is used to designate the courses in education that are fundamental in the preparation of all teachers whether they be teachers of the customary high-school subjects or teachers of the newer high-school subjects such as agriculture and home economics; and also the advanced work in educational psychology, administration and research. Attention was called in the last biennial report to the demand for work in elementary education beyond that furnished by the Normal School. This demand has increased notably during the present biennium. The demand comes from graduates of the Normal Schools who have been teaching three or more years and who need advanced training in preparation for positions as county supervisors, helping teachers and elementary school principals. The summer school opens the door of the College for many students of this type. Many such are registering as degree students, getting part of their courses in the summer school and spending a year or more in regular residence at the College.

The demand for graduate work in education described in the last biennial report has continued and increased during the present biennium. This demand comes chiefly from teachers in service who wish to qualify for high-school principalship and other supervisory positions in the public schools. At the present time twenty-four such students are registered in the graduate school. They will take most of their work in the summer sessions but the direction of their studies and the work falls upon the regular instructors.

This in general is the layout of the work of the department of general education. The department is under the direction of the Dean (Professor of Education), but all members of the faculty assist in carrying out the instructional program, each member giving the courses he is qualified to handle. The outstanding need of this department is a professor of educational psychology, who should be available also to co-operate with the State Department of Education in carrying out educational research policies.

The special training of students preparing to teach the arts and sciences subjects in high schools is carried on as a part of the work of the department of general education. At the time of the last report, nineteen students were enrolled in this department, at the present time there are thirty-nine, of whom seven are seniors. One supervising teacher located in the Hyattsville High School employed jointly by the College and the County School Board and one instructor in the College who devotes part time to supervision of practice teaching constitute the present force for handling the special methods and practice teaching in the arts and sciences subjects. This is sufficient for the present year. Within the next three years, however, the

number of students and the variety of subjects will have so far increased as to demand double the present force.

During the past two years the Department of Agricultural Education has not been able to meet the demands for trained teachers of agriculture, even though the department has had the largest classes in its history. The unusual development of the work in the State during the year 1923 has resulted in an increased enrollment in the upper classes. During the academic year of 1922-1923 a total of 22 were enrolled. The present semester finds a total of 19 students enrolled for specialization in the department. In addition to the students who are registered in it for specialization, the department carries its quota of basic courses in education in the College of Education and in the summer school. The latter part of the scholastic year of 1922-1923, the Extension Service designated the agricultural education curriculum as the curriculum for the training of extension workers in agriculture with the recommendation that the department arrange for a special course in "Problems and Practice in Extension Teaching" in addition to the regular requirements of the curriculum. The department has arranged to offer this work during the second semester of the present year.

Until the beginning of the present academic year (1923-24), the Professor of Agricultural Education has acted as State Supervisor of Vocational Agriculture for the State Department of Education and has found it necessary to devote considerable time to field work. With the employment of a full-time Supervisor of Vocational Agriculture, the Professor of Agricultural Education has been relieved of excessive field work and will only be in the field sufficient time to follow up those graduates of the University who are employed as beginners in the State each year. The demand upon the department for extension work continues as heavy as in past years.

The arrangement with the school authorities of Prince George's County whereby the prospective teachers of agriculture get experience in teaching under supervision in the Hyattsville High School has been in successful operation for four years. At the present time forty-three pupils are enrolled in the course in Vocational Agriculture in this school. This insures ample opportunity for the necessary supervised teaching on the part of students in this department; and further has enabled the department to do far more research in its field of Agricultural Education than otherwise would have been possible.

The Training Department at the Hyattsville High School if it is to function adequately, should serve as an object lesson to the other departments of Agricultural Education in the high schools of the State. This will never be possible unless the department has more room and is equipped with a model farm shop, and the other devices which it does not now have and which are necessary for the best type of vocational instruction. Work during the present biennium

has been efficient, but it could be made better if adequate facilities could be provided.

At the University, also, the Department of Agricultural Education would function better if it had a special laboratory for the special features of its work. Without such a laboratory the department is unable to house and operate the materials and equipment necessary for the most efficient instruction.

The Home Economics Education Department has as its special aim the training of teachers of Vocational Home Economics for Maryland. Since the organization of this department in 1920 nine girls have completed the four-year course and there are now seven of these graduates teaching Home Economics in the public schools of Maryland. Twenty-eight students are at present enrolled in this department.

With the co-operation of the Prince George's County school authorities there has been an opportunity for practice teaching. The senior students do their practice teaching under supervision in the Hyattsville High School. Each girl is required to do observation work and to teach one high-school class for one semester. In the spring term of 1923 there were thirteen girls doing health teaching in the elementary schools at Laurel, Branchville, Berwyn, College Park, Riverdale, Hyattsville and Brentwood.

During the last biennium the head of the department has acted as State Supervisor of Vocational Home Economics for the State Department of Education. There are now ten day schools in the State which are visited twice every year and conferences of these teachers are held during the year. As the Vocational Home Economics work develops in the State and the Teacher Training Department increases it will be necessary for the State supervision work to be taken over by the State Department of Education or for a critic teacher to be employed for the supervised teaching. The full time of one person will be required for the work of supervision and the full time of the other will be required for the teacher-training work and the supervision of the practice teaching.

In order to develop a high grade of teaching, the Home Economics Department in Hyattsville should be under the supervision of the University as is the Agricultural Department of the High School, and there should be a suitable laboratory and sufficient equipment for the teaching of Home Economics. As the cottage or apartment is the satisfactory "laboratory" for teaching home making it is recommended that a cottage or apartment be provided for the Home Economics classes. The work would then be given under more favorable conditions and a standard of housing and equipment set up for the guidance of other such high-school departments in the State.

As in the last biennium the Department of Industrial Education has been occupied chiefly in establishing and maintaining courses in Baltimore for teachers of industrial subjects and foremen in industrial

lines. For the current year twelve courses are offered designed to meet the need of the following classes: (1) day teachers in the unit trade schools; (2) night school teachers who are employed by day in the industries; (3) tradesmen who desire to become teachers of their respective trades in the public schools; (4) tradesmen who may become instructors of apprentices in the industries; (5) teachers of part-time students who are employed half time in the industries and attend the public schools half time; (6) executives who may become directors of the educational policies of industrial establishments. The enrollment last year (1922-23) in such courses was approximately fifty. The preliminary enrollment for the present year indicates a total enrollment well above one hundred in Baltimore. A beginning of such classes is also under way in Cumberland. The healthy and conservative increase in the demand for this type of industrial education is sure evidence of further development and permanency. During the present year this will be checked and verified, by a thorough survey by the Department, of the industrial training needs in the State. Additional personnel will be needed in the next biennium.

Maryland has a compulsory physical education law. The State Department of Education in co-operation with the Playground Athletic League, has promoted a wise policy of making this law gradually effective. The most important accessory agency for making the law effective is facilities for preparing teachers and supervisors for this work. The summer school has made a modest beginning towards fulfilling this requirement, but there is urgent need for a department and a professor of Physical Education in the College of Education. For the immediate future he could serve also as Director of Physical Education for the College in charge of the special and corrective work. The completion of the new gymnasium makes this a strategic time for establishing this department.

It was noted above that the Department of Agricultural Education suffers from lack of definite laboratory space. It is equally true that the College as a whole suffers from lack of definite class rooms and laboratories. Without class rooms devoted specifically to the courses in education it is impossible to assemble and utilize effectively the demonstration material essential to the most successful teaching.

In summary: The College of Education has grown satisfactorily during the biennium just closing both in numbers and usefulness as measured by the increasing extent and variety of its services. With very moderate increase in resources its usefulness can be very greatly increased. The necessary additions to personnel are a Professor of Psychology, a Professor of Physical Education, an Assistant Professor of Industrial Education and additional critic teachers in connection with the co-operative teacher-training enterprise in the Hyattsville High School. In the way of equipment, the urgent needs are better equipment for the Agriculture and Home Economics in the high school, means of expeditiously transporting student teachers to and

from the high school and special class room and laboratory space. These additions are necessary if the College is to play fairly its part in the educational system of the State.

The proper development of the program of the College of Education will not give the University a monopoly in this field and it will not curtail the usefulness of the other colleges in the State that undertake to prepare teachers. All of these resources combined do not now meet the need for trained teachers. The University College of Education if it does its duty will supply part of needed high-school teachers of the traditional subjects (probably not more than 50 per cent); all of the vocational teachers; and will provide adequate facilities for the preparation of high-school principals and supervising officials and for carrying on necessary educational research.

Respectfully submitted,

WILLIARD S. SMALL, *Dean.*

The Summer School

*The President of the University,
College Park, Md.*

Sir: The program of instruction in the Summer School is planned to meet the needs of four classes of students: (1) teachers in service who desire Summer School opportunities; (2) regular undergraduate students who are candidates for degrees in the several colleges; (3) graduate students; (4) special students who find they can attend college conveniently during the summer such as farmers, breeders, dairymen, home makers, chemists and others desiring special work.

The increasing amount of service rendered by the Summer School is indicated by the statistics of growth included in the table on the report of the College of Education. The distribution of the 452 students in the session of 1923 is as follows:

1. By Sex: Men, 190; women, 262.
2. By Groups: (1) graduate students, 30; (2) regular undergraduate students, 33; (3) Veterans' Bureau students, 100 (project men, 71; regular college men, 29); (4) teachers, 272 (elementary school teachers, 207; high-school teachers, 67).
3. By Geography: (1) from Maryland, 368; from other States and foreign countries, 84.

Every county in the State was represented, the numbers varying from 3 to 88.

It will be noted that 60 per cent of the enrollment consists of teachers of whom one-fourth were high-school teachers. As pointed out in the last biennial report, an increasing number of these summer teacher-students are registering as candidates for college degrees. This tendency is highly gratifying as it shows a purpose on the part of the teachers to broaden their preparation and thus increase their usefulness to the communities they serve. Similarly there is an increasing number who register for graduate work in preparation for the high-school principalship and for the supervisory positions.

To vitalize the methods courses for elementary school teachers, an elementary demonstration school has been operated during the past two years in co-operation with the College Park Home and School Association and the school authorities of Prince George's County. This school is essentially a rural school in organization and method, comprising grades one to six, inclusive, and provides opportunity for

observation of good rural school procedure as well as for a limited amount of practice teaching.

At the request of the State Department of Education, a beginning was made in the summer session of 1923 of a demonstration high school. Enrollment was limited to pupils just entering the high school. Fifty-nine pupils were enrolled, of whom 45 persisted through the session and received credit for their work. This school furnishes opportunity for observation of good high-school methods and also for a limited amount of practice teaching.

These demonstration schools are very essential factors in a worthwhile Summer School program for teachers, both high and elementary. Their scope should be increased, especially that of the high school. To maintain effectively these very necessary adjuncts to the Summer School curriculum will require some increase of funds in the next triennium.

It is evident that more and more the Summer School is becoming an opportunity school for those who cannot attend college during the major part of the year, but who recognize the need for further education—many of whom purpose to complete the full college requirements for degrees. This demands larger and more advanced offerings of courses and consequently more funds. If the University is to serve the educational interests of the State as it should additional funds must be made available for the Summer School. A moderate increase is imperative merely to keep up with these demands. Another reason for such increase lies in the fact that many of the members of the regular college faculty are engaged in special research in their respective fields during the summer months and it is, therefore, difficult to retain them for the Summer School work. It is often necessary either to secure additional instructors to take care of their work or to omit it entirely from the program. The latter alternative is entirely unsatisfactory. Funds should be available for supplementary instructors.

The additional funds needed to meet these demands during the next triennium is \$9,000, or an average of \$3,000 a session.

Respectfully submitted,

WILLIARD S. SMALL, *Director.*

The College of Engineering

*To the President of the University,
College Park, Md.*

Sir: The continued increase in the enrollment of students in the Engineering College emphasizes the demand that is made upon the State for Engineering Education. The enrollment, by years, for the past five years is as follows:

1919.....	108
1920.....	114
1921.....	158
1922.....	181
1923.....	203

During this period, the courses offered in civil, electrical and mechanical engineering have been thoroughly revised and brought to the standard of engineering colleges, generally, throughout the country.

The College of Engineering is now duly registered by the Board of Regents of the University of the State of New York, as meeting all requirements prescribed by the Board.

Many of the statements made in the previous biennial report can will bear repetition here.

It is idle to argue as to the relative value of an agricultural, a general arts, a medical, an engineering, or any other special curriculum of study. All are essential to the progress of a community; all should be liberally supported.

The time is here when the public is to call upon the engineer to occupy far larger fields of influence in the direction of public and quasi-public affairs. In an ever-increasing degree do the people living in the country, as well as those of the cities, depend upon the collective efforts of others for daily necessities and conveniences. That these shall not fail, that adequate services are rendered for a reasonable reward, that sufficient organizations exist to carry on such enterprises, that the most from our natural resources is rendered to all people, are constructive problems that call for men trained to constructive thinking. And Engineering is pre-eminently the constructive profession. It is not difficult, therefore, to comprehend how great are the opportunities and the responsibilities that are to come to our engineers.

The Engineering College must inspire its students to realize the possibilities that lie before the well-trained engineer in such service. Therefore, it seems especially to be the function and duty of the State University to supply the demands of young men of the State who seek to become engineers.

As is stated in the catalogue of the College of Engineering, the general purpose in the development of the courses offered has been to broaden the training that the young men receive that they may be better prepared and feel the responsibility to render service to the public. The above gives a suggestion of the policy and the aspirations, which actuate the upbuilding of the College Engineering of the University of Maryland.

It will not be amiss here to point out briefly some of the work that is under way, as well as the important needs of the College. There are now offered courses in three branches of Engineering—civil, electrical and mechanical—each of which requires four years of study for completion. The catalogue for 1923-1924 contains the outline of the courses. The prescribed courses of study call for the same work for the first two years in all three branches of Engineering now offered. Thus, a student need not decide definitely which course he desires to pursue until the beginning of his junior year. This plan is in accord with the best opinion on the subject today.

It has also been the endeavor to arrange the work of all on the staff of instructors so that the students in their freshman year shall come into direct contact with the heads of departments, as well as with the other members of the teaching force. Already much in this direction has been accomplished, and much more is possible.

The present enrollment of Engineering students taxes to the utmost the present corps of instructors. Also there is every indication of a largely increased demand for admission to the Engineering courses. But many must be disappointed unless a larger equipment is provided; first, a greater number of instructors; second, more apparatus and buildings. As it is, many Maryland boys are obliged to go outside their own State to secure educational facilities not open to them at their own State University. This is not as it should be.

Research work, particularly in the field of Engineering, is of vital importance to both those engaged in the active work in the profession and those engaged in training young men who expect to follow an Engineer career. Through co-operation with the U. S. Bureau of Public Roads and the State Roads Commission of Maryland, considerable research work has been carried on. Highway traffic studies have been made and the results have proved of practical value in the handling of problems that arise in the administration of the State Highways. A series of investigations has been under way for the past few years, studying the elastic properties of concrete; this work being co-ordinated with work of similar character that is under way at other laboratories. In the prosecution of these investigations,

many pieces of special apparatus have been designed and made in the laboratories at the University.

This work of Engineering research has been given impetus by the establishment of the National Research Council, organized under the National Academy of Sciences. One of the divisions of this organization, the Advisory Board on Highway Research, has organized a very extended program of investigations, touching every phase of highway development on both the physical and economic sides. The work carried on at the University of Maryland is a part of this large and general program towards which the State highway commissions, various State universities and scientific branches of the Government, are all contributing. The fact that such work is under way furnishes not only inspiration to the instructors, but adds much of educational value to the student.

In the fall of 1923 there were opened extension classes for miners in the coal fields in the western part of the State. This work was made possible through the co-operation of the State Bureau of Mines and the State Department of Education. Classes have been formed at five points, with an average total attendance of 157, out of a total enrollment of 184. The work at present is in charge of a single instructor.

The number of men who will attend such classes will increase steadily in the next few years, and it is hoped that it will be possible to have this very important work well organized and fitted into its proper place in the public educational scheme of the State.

Much more might be said of the policy and work of the Engineering College, but the above, it is hoped, will suffice to show the large opportunities that lie ahead and the need of the State to develop them.

But if the College of Engineering is to meet the demands made upon it by the people of the State for the instruction of young men desiring such training, and if the college is to keep abreast of the requirements that Engineering training of today demands, greatly increased facilities must be provided.

Very truly yours,

A. N. JOHNSON, *Dean.*

The Graduate School

*To the President of the University,
College Park, Md.*

Sir: The Graduate School was organized to furnish opportunity for qualified graduate students to pursue advanced study and research in their chosen fields. This is a very important and necessary function of an institution for higher education.

The Graduate School prepares men and women for the higher positions in the teaching profession. The high schools, colleges and professional schools are now demanding of their teachers advanced post graduate instruction.

The Graduate School also affords opportunity for men and women to better prepare themselves for careers in the applied sciences, which play such an important role in our modern civilization. Scientific specialists are in great demand to fill positions in applied Chemistry, Geology, Bacteriology, Physics, Horticulture, Entomology, Psychology, etc. These scientists are rendering especially important public service in connection with sanitation and public health laboratories and as government experts, both State and National. The demands of the industries, including agriculture, for highly trained scientific specialists, are steadily increasing.

Graduate work in the social and political sciences is required for many important careers in the fields of business administration, marketing, transportation, social and welfare work, public service, etc.

One of the most important functions of the Graduate School is to produce creative scholars trained in the methods and technique of research and equipped to grapple with the problems continually arising in connection with our economic, political and social life. The many unsolved problems concerning health and disease are demanding the best efforts of highly trained research scientists. The State and Federal Governments appropriate large sums of money to investigate the problems continually arising in connection with Agriculture, the great industry concerned with our food supply. The State Agricultural Experiment Stations and other government research agencies must be supplied with men specially trained in their subjects and in the methods of research. The Graduate School furnishes this training. One of the requirements for a higher degree in the Graduate School is the preparation of a dissertation. This is frequently based upon some phase of a research project directly related to Agriculture or other industries of the State. In this way, the graduate students,

while getting their training, assist very materially in the solution of problems that are of great importance to the State.

A large number of requests for graduate work have been refused because the departments in which the students desired to do their major work, are unable at the present time to offer graduate work. The high standard of our requirements for the advanced degrees has also operated to limit the possible enrollment in the Graduate School.

A total of 173 students have matriculated in the Graduate School since its organization five years ago. The growth of this school may be indicated by the number of students registered for graduate work during each academic year of this period.

Year	Number of Students
1919-1920.....	12
1920-1921.....	27
1921-1922.....	56
1922-1923.....	91

A Graduate School cannot develop successfully unless the spirit of the University fosters and encourages productive scholarship. One of the important duties of a University is to add to the sum of knowledge. Productive scholarship has supplied the information now taught to our students. The steady growth of research in our State Universities shows clearly that the States are recognizing the value of such work to the commonwealth and to society in general.

Some men are primarily teachers and are of most value to the University by devoting their entire time to this type of work. Other men can render the most service in administrative positions. There should always be another group of men on the staff of a University who are endowed with the spirit of research and who have demonstrated their ability as creative scholars. The research efforts of these men should be encouraged and their work recognized to the extent of relieving them of too heavy a burden of undergraduate teaching. A few outstanding research men could render the most service to the University and the State by devoting their entire time to research and in directing the work of a limited number of graduate students.

If only one man in a department is engaged in research, it tends to vitalize the teaching in that department as the students are brought into intimate contact with productive scholarship in the subject.

A statement regarding the general financial needs for the next biennium was submitted in a previous financial report.

RESEARCH COMMITTEE

The Council of the Graduate School also functions as the Research Committee. These committees in the various institutions are endeavoring

oring to locate the men with research talent so that they may be encouraged in this work by being supplied with the necessary facilities and assistance, in case these are not already furnished by special State, or national appropriations. The Research Committee of this institution has been able to do very little toward fostering research and productive scholarship throughout the University because of the very limited funds at its disposal.

At your request the committee has assembled the research publications for the period since the last biennial report. This list includes only publications based upon research and productive scholarship. It also includes the Experiment Station research bulletins as well as the papers published in scientific journals.

Most of this research was under the direction of the Experiment Station but a few departments without Experiment Station support were able to make a splendid showing in productive scholarship.

PUBLICATIONS

APPLEMAN, C. O., *Ph. D., Professor of Plant Physiology and Bio-Chemistry. Dean of the Graduate School.*

Evaluation of Climatic Temperature Efficiency for Ripening Processes in Sweet Corn. C. O. Appleman and E. V. Eaton. *Jour. Agric. Res.* 20:795-805. 1921.

Reliability of the Nail Test for Predicting the Chemical Composition of Green Sweet Corn. *Jour. Agric. Res.* 21:817-820. 1921.

Some Factors Influencing the Vitality of Seed Potatoes. *The Maryland Farmer.* 5:16. 1921.

Some Physiological Aspects of Potato Storage. Invitation Paper in a Symposium on Potato Storage. Potato Association of America, Boston, Dec. 29, 1922. (Published in the proceedings.)

Changes in Composition of Sweet Corn As It Matures. Invitation Paper in the fourth Iowa Nebraska Cannery Short Course. February 14th and 15th. 1923. (Published in the proceedings.)

The Modern Potato Problem. Published as a chapter in a book entitled "Science Remaking the World," edited by Drs. Caldwell and Slosson and published by Doubleday-Page Co. 1923.

Forecasting the Date and Duration of the Best Canning Stage for Sweet Corn. *Station Bulletin No. 254.* 1923.

Carbohydrate Metabolism in Plants. Invitation paper in symposium arranged jointly by the Plant Physiological Section of the American Botanical Society and the American Chemical Society. Boston, 1923. Also given by invitation before the Osborne Society, Ames, Iowa. Feb., 1923. In press.

AUCHTER, E. C., *Ph. D., Professor of Horticulture.*

Apple Pollen and Pollination Studies in Maryland. *Amer. Soc. for Hort. Sci.*, pp. 51-80. 1921.

Pruning and Nitrogen Studies in a Devitalized Peach Orchard. *Amer. Soc. for Hort. Sci.*, pp. 178-193. 1921.

- Does It Pay to Thin Apples. Ann. Rept. of the Winchester Co. Fruit Growers' Assn., Va. 1921.
- The Price of Apple Varieties on Different Markets. Maryland Farmer. Sept. 1921.
- Market Preferences for Apple Varieties. W. Va. State Hort. Soc. Rept. 1921.
- The Influence of Various Systems of Grape Training on Fruit Production. E. C. Auchter and W. R. Ballard. Md. Agric. Expt. Sta. Bul. 250. 1922.
- Apple Scab and Its Control. Ann. Rept. of the Peninsula Hort. Soc., pp. 107-113. 1922.
- How Fruit Spur Growth and Pollination Affect the Yield of Fruit Trees. N. C. State Hort. Soc. Rept. 1923.
- Is There Normally a Cross-Transfer of Foods, Water and Mineral Nutrients in Woody Plants. Md. Agric. Expt. Sta. Bul. In press.
- ADAMS, R., (See Gardner).
- BOSWELL, V. R., B. S., *Assistant in Horticulture.*
Changes in Quality and Chemical Composition of Parsnips Under Various Storage Conditions. Md. Agric. Expt. Sta. Bul. 1923. In press. (See Jones.)
- CONRAD, C. M., B. S., *Assistant in Plant Physiology.*
The Yeast Method for Determination of Pentoses in the Presence of Hexoses. Reported at Boston Meeting of Plant Physiologists. Boston. 1923. In press.
- COPE, J. A., *Assistant Forester.*
Loblolly Pine. 1923. In press.
- CORY, E. N., M. S., *Professor of Entomology, State Entomologist.*
Dusting the Pea Aphis. Jour. Econ. Entomology. 16:18-84. 1923. Experiments on the Control of the Woolly Aphis. Bul. 252.
- DEVault, S. H., A. M., Ph. D., *Assistant Professor of Agricultural Economics.*
The Marketing of Specific Farm Products in Maryland. The Horn-Shafer Co., Balto., Md. 1922.
The Marketing of Wheat in Maryland. In press.
- DOAN, F. J., B. S., *Assistant in Dairy Husbandry.*
The Variations in Different Methods of Butter Fat Testing. Amer. Jour. Dairy Sci. 1923.
- EZEKIEL, W. N., M. S., *Assistant Plant Pathology.*
Some Factors Affecting the Production of Apothecia of Sclerotinia Cinerea. Phytopath. 11:495-499. 1921.
Photographing Tube Cultures. Phytopath. 12:399. 1922.
Hydrogen-ion Concentration and the Development of Sclerotinia Apothecia. Science 58:166. 1923. (See Norton.)
- FLENNER, A. L., B. S., *Assistant Chemist.*
(See Lichtenwalner.)
- GAMBLE, J. H., M. S., *Professor of Dairy Husbandry.*
The Effect of Silage on the Flavor and Odors of Milk. U. S. Bul. 1097. U. S. D. A.

GARDNER, J. H., *Ph. D., Professor of Chemistry.*

Trihydroxy-Methyl-Anthraquinones II. Jour. Amer. Chem. Soc., Vol. 45, 2455. 1923. Gardner, J. H., and R. Adams.

GORDON, N. E., *Ph. D., Professor of Physical Chemistry, State Chemist.*

Application of Educational Psychology to Chemical Education. School of Science and Math., Vol. 21. No. 9. 1921.

When Will the Teaching of Chemistry Become a Science? Science, N. S., Vol. 54. No. 1409. Pp. 656. 1921.

Influence of Soil Colloids on Availability on Salts. N. E. Gordon and E. B. Starkey. Soil Sci., Vol. 14. No. 1. 1922.

Availability of Potash in Mixed Fertilizers. Science, 56:695. 1922. Amer. Fertz. 57:55. 1922.

Gels and the Theory of Adsorption. 1923. In press.

Some Problems in Chemical Education Which Are Vital to the Development of the Chemistry of this Country. 1923. In press.

The Origin of Soil Colloids. Science, 54:676. 1922.

Adsorption from Solution. Science, 54:536. 1921.

The Solubility of Liquids in Liquids. The Partition of the Lower Acids, particularly Formic, Between Water and Various Organic Solvents. Jour. Phy. Chem., 26:773-789. 1922. N. E. Gordon and E. E. Reid.

The Availability of Salts as Indicated by Soil Colloids. N. E. Gordon and E. B. Starkey. Science, 54:610. 1921.

(See Lichtenwalner, Marker, Reinmuth, Starkey, White and Wiley.)

HAMILTON, C. C., *M. S., Associate in Entomology.*

Studies on the Morphology, Biology and Taxonomy of the Larvae of Holarctic Tiger Beetles (Cicindelidae). 1923. In press.

JEHLE, R. A., *Ph. D. (See Norton).*

JOHNSTON, E. S., *Ph. D., Associate Professor in Plant Physiology.*

The Seasonal March of the Climatic Conditions of a Greenhouse as Related to Plant Growth. Md. Agric. Expt. Sta. Bul. 245. 1921.

Nutrient Requirement of the Potato Plant Grown in Sand Cultures Treated with "Type 1" Solutions. Soil Science, 10:389-408. 1921.

The Freezing of Peach Buds. Monthly Weather Review, 49:231. 1921. Abstract of paper presented before the Amer. Nat'l Soc. at Washington, D. C., April 20, 1920.

Undercooling of Peach Buds in Ames Jour. Bot., 9:93-98. 1922.

Moisture Content of Peach Buds in Relation to Temperature Evaluation. Bot. Gaz., 74:314-319. 1922.

Moisture Relations of Peach Buds During Winter and Spring. Md. Agric. Expt. Sta. Bul. 255. 1923.

JONES, H. A., *Ph. D., Professor of Vegetable Breeding.*

Tomatoes for Market and Canning. Md. Agric. Expt. Sta. Bul. 248. 1922.

Time for Flower Primordia Development in the Onion. (*Allium cepa*, L.) Jones, H. A., and V. R. Boswell. Amer. Soc. for Hort. Sci. Rept., pp. 145-148. 1922.

- KEMP, W. B., *M. S., Associate in Agronomy.*
 An Index for Measuring the Performance of Wheat Varieties.
 Jour. Amer. Soc. of Agron. 1922.
 (See Metzger.)
- KHARASCH, M. S., *Ph. D., Associate Professor of Chemistry.*
 The Behavior of Mercuric Salts and Carboxylic Acids Toward Heat (1). Jour. Amer. Chem. Soc.
- LEE, F. E., *Ph. D., Professor of Political Science and Sociology. Dean of the College of Arts and Sciences.*
 The Silver Situation in China. Trade Information Bulletin.
 The Silver Situation in India. Trade Information Bulletin.
 Chinese Revenues. Commerce Reports. Dept. of Commerce.
 Japan's Financial Position Before and After the Earthquake.
 Trade Information Bulletin.
- LICHTENWALNER, B. C., *M. S., Instructor in Chemistry.*
 Adsorption and Replacement of Plant Food in Colloidal Oxides of Iron and Aluminum. D. C. Lichtenwalner, A. L. Flenner and N. E. Gordon. Soil. Sci., Vol. 15. No. 3. 1923.
- MARKER, R. E., *M. S., Assistant in Chemistry.*
 Adsorption of Dyes by Gels Under a Varying pH. R. E. Marker and N. E. Gordon. Science, Vol. 58. No. 1503. 1923.
- MCCALL, A. G., *Ph. D., Specialist in Soils.*
 Fertilizers for Maryland Soils. Md. Agric. Expt. Sta. Bul. 247. 1922.
 The Influence of Acidity Itself on Plant Growth Without Regard to Other Factors. Jour. Amer. Soc. Agron., 15:290-297. No. 7. 1923.
- METZGER, J. E., *B. S., Professor of Agronomy.*
 Garlic and Other Factors Influencing Grades of Wheat. Md. Agric. Expt. Sta. Bul. No. 246.
 Sweet Clover for Summer Pasture and Green Manure. Md. Agric. Expt. Sta. Bul. No. 253.
 Standards for Seed and Show Corn. J. E. Metzger and F. W. Oldenburg. Md. Ext. Bul. No. 29. 1923.
 Factors Influencing Wheat Yields at College Park. J. E. Metzger and W. B. Kemp. In press.
 Pasture supplements. In press.
- NORTON, J. B. S., *M. S., Professor of Systematic Botany and Mycology.*
 The Leading Commercial Dahlias. Florists' Exchange. 52:869-890. 1921.
 What America Has Done for the Dahlia. Garden Mag., 34:192-195. 1921.
 Principles of Nomenclature for Dahlia Varieties. Bul. Amer. Dahlia Soc., 3:23. 1922.
 Fruit Rotting Sclerotinias-I. Apothecia and the Brown-rot Fungus. J. B. S. Norton, W. N. Ezekiel and R. A. Jehle. Md. Agric. Expt. Sta. Bul. In press.
- OLDENBURG, F. W. (See Metzger).

- PROFFITT, M. M., *Ph. B., Professor of Psychology and Industrial Education.*
Teaching of English in Industrial Day Schools. Vocational Education. May., 1923.
- REID, E. E. (See Gordon).
- REINMUTH, O., *B. S., Assistant in Chemistry.*
Effect of Hydrogen-ion Concentration on Adsorption of Dyes by Wool and Mordants. O. Reinmuth and N. E. Gordon. Industrial and Engr. Chem., 15:818. No. 8. 1923.
- REYNOLDS, C.
The Color of Cow's Milk. Guernsey Breeders' Jour. 1923.
- SMALL, W. S., *Ph. D., Dean of the College of Education. Professor of Education, and Director of the Summer School.*
Educational Hygiene. Bul. No. 33. 1923. U. S. Bureau of Ed.
- STARKEY, E. B., *M. S., Instructor in Chemistry.*
The Influence of Hydrogen-ion Concentration on the Adsorption of Plant Food by Soil Colloids. E. B. Starkey and N. E. Gordon. Soil Sci., Vol. 14. No. 6. 1922.
Adsorption of Inorganic Salts by Alumina Gel Under a Varying Hydrogen-ion Concentration. E. B. Starkey and N. E. Gordon. Science, Vol. 58. No. 1503. 1923.
Thermo-Regulator. E. B. Starkey and N. E. Gordon. Jour. Ind. and Engr. Chem., 14:541. 1922. (See Gordon).
- THURSTON, A. S., *M. S., Associate Professor of Floriculture.*
Garden Flowers. U. of Md. Ext. Bul. No. 23. 1922.
- WHITE, C. E., *B. S., Assistant in Chemistry.*
Adsorption of Dyes by Gels Under a Varying pH in the presence of Inorganic Salts. C. E. White and N. E. Gordon. Science, Vol. 58. No. 1503. 1923.
- WHITE, T. H., *M. S., Vegetable and Floriculture.*
Bacterialized and Radio Active Fertilizers. Florists' Exchange. December 14, 1922.
Carbon Dioxide for Greenhouse Plants. Florists' Exchange. January, 1923.
Late Cabbage for Southern Maryland. Seed World. 1923. Fertilizing and Seed Selection Experiments of Irish and Sweet Potatoes. Bul. 251.
Some Studies in the Production of Double Blooms of Stocks. (Mathiola Icana Annua.) Md. Agric. Expt. Bul. 1923. In press.
- WILEY, R. C., *M. S., Associate Professor of Chemistry.*
Adsorption of Plant Food by Colloidal Silica. R. C. Wiley and N. E. Gordon. Soil Sci., Vol. 14. No. 6. 1922.
Availability of Adsorbed Phosphorus. R. C. Wiley and N. E. Gordon. Soil Sci., Vol. 15. No. 5. 1923.
Effect of the History of Adsorbent in Adsorption. R. C. Wiley and N. E. Gordon. Science, 54:555. 1921.
- ZUCKER, A. E., *Ph. D., Professor of Modern Languages.*
History of Literature from Homer to Modern Times. Commercial Press, Shanghai.
The Elizabethan and the Chinese Drama. La Revue de la Litterature Comparee, Paris.

Theses—1920-1924

- CHEN, C. C., *M. S.*
Diseases Carried Within the Seed. 1920.
- NICKELS, C. B., *M. S.*
A Study of the Biology and Control of the Corn-Root Aphid. 1920.
- SANDO, C. E., *Ph. D.*
The Process of Ripening in the Tomato, Considered Especially from the Commercial Standpoint. 1920.
- BAILEY, C. H., *Ph. D.*
Respiration of Shelled Corn. 1921.
- EZEKIEL, W. N., *M. S.*
Fruit Rotting Sclerotinias. 1921.
- JONES, J. P., *M. S.*
The Relation of Vitamines to Plant Growth. 1921.
- MARTIN, J. H., *M. S.*
A Kernel Classification of the Wheat Varieties of the U. S. 1921.
- MILLER, E. V., *M. S.*
Biochemical Study of Maturity in the Irish Potato. 1921.
- SANDO, W. J., *M. S.*
A Mendelian Study of *Portulaca Grandiflora*. 1921.
- SMITH, A. M., *M. S.*
A Study of the Changes in Availability of the Potassium and Phosphorous in Greens and Sulfur Composts. 1921.
- STANTON, T. R., *M. S.*
Studies on the Inheritance of Quantitative Characters in America. 1921.
- DONALDSON, E. C., *M. S.*
Soil Reaction as Affected by Calcium and Magnesium Salts. 1922.
- STARKEY, E. B., *M. S.*
The relation of H-ion Concentration to Adsorption. 1922.
- TRUITT, R. V., *M. S.*
Investigation of the Oyster Industry on the Chesapeake Bay 1922.
- WILEY, R. C., *M. S.*
Adsorption from Solution. 1922.
- WILHELM, C. P., *M. S.*
A Study of the Effect of Heat upon the Availability of the Phosphorus in Basic Phosphate Rock. 1922.
- YOUNG, M. R., *M. S.*
Seasonal Variation in the Composition of Milk in Maryland. 1922.
- BOSWELL, V. R., *M. S.*
Changes in Quality and Chemical Composition of Parsnips Under Various Storage Conditions. 1923.
- BROWNE, E. L., *M. S.*
Survey of Milk Marketing in Baltimore, Md.; Philadelphia, Pa., and Washington, D. C. 1923.

CANTER, F. D., *M. S.*

A Study of the Present Systems of Co-operative Marketing of Dairy Products in the United States. 1923.

CONRAD, C. M., *M. S.*

Yeast Method for Determining Pentoses in Presence of Hexoses. 1923.

DARKIS, F. R., *M. S.*

The Solvent Action of Salts on Two Phases of a Soil. 1923.

EATON, O. N., *M. S.*

Normal Self-Fertilization in Corn. 1923.

HOWE, C. H., *M. S.*

A Study of the Physical and Chemical Changes in the Soil Responsible for Decreased Yields Following the Excessive Application of Calcium Carbonate. 1923.

JENKINS, H. F., *M. S.*

The Effect of Light and the Relative Length of Day and Night and Growth and Reproduction in the Onion. 1923.

LICHTENWALNER, D. C., *M. S.*

Adsorption from Solution by Hydrrous Ferric Oxides. 1923.

MATZEN, B. A., *M. A.*

A Thought Subject Index of the Poetry of Robert Browning. 1923.

MCCARRON, M. A., *M. S.*

The Marketing of Fluid Milk in Maryland with Special Reference to the Co-operative Movement. 1923.

MORAN, J. A., *M. S.*

The Increased Bacterial Content of Milk Due to Manurial Pollution. 1923.

PREINKERT, A. H., *M. A.*

The Problem of Freshman English in American Universities and Colleges. 1923.

SCHUCH, J. D., *M. S.*

The Effect of Different Acid Radicals of Potash Salts on the Chemical Reactions in Different Depths of Soil. 1923.

SCHRAMM, G. N., *M. S.*

The Tarnishing of Silver and a Comparison of the Electrolytic Methods of Detarnishing. 1923.

SHER, B., *M. S.*

1. Electronic Conception of Valence and Heats of Combustion of Organic Compounds.
2. The Behaviour of Mercuric Salts of Aromatic Acids Toward Heat. 1923.

SHILLINGER, J. E., *M. S.*

The Effect of Certain Parasitocides on the Host Animals. 1923.

VIERHELLER, A. F., *M. S.*

Investigations in the Rooting of Apple Cuttings. 1923.

Respectfully submitted,

C. O. APPLEMAN, *Dean.*

The College of Home Economics

*The President of the University,
College Park, Md.*

Sir: The College of Home Economics is the youngest college in the University, having been organized with one department and an enrollment of five students, in October, 1918.

Since 1918, the enrollment has increased to include half of the one hundred and twenty-five women students now in the University. This enrollment includes students registered in Home Economics Education, in the College of Education, whose basic Home Economics work is given in the College of Home Economics.

The work of the College of Home Economics is planned with the following aims in view: to train young women who come to College, to be real home makers and good citizens; by so planning their course of study that they may receive an education that is at once cultural and practical, with Home Economics as a speciality; and to further prepare these young women to earn their living in one or more of the following ways: by teaching Home Economics, or as home demonstration agents; as textile experts, buyers of clothing in department stores, or as costume designers; as directors of institutional dining-rooms, hotel dining-rooms, cafeterias, tearooms, or of the dietary departments of hospitals; as Home Economics specialists in social service work.

The third aim of the College of Home Economics is to carry on the work of housekeeping within the University, viz., the food and dormitory service for the students.

In order to carry out these aims, the College of Home Economics is organized into the following Departments of Textiles and Clothing, Foods and Cookery, Home and Institutional Management, and Hygiene and Health.

The Department of Textiles and Clothing offers work in textiles, in the designing and the making of clothing, and in home architecture and decoration.

New courses have been added by this department covering advanced work in the above courses, part of which have been designed to prepare those students who wish to do commercial work in this line. A small shop has been temporarily furnished where the work of the advanced art class is sold with a twofold purpose, to help defray the expenses of the materials used and to give the students some training in salesmanship.

The Department of Textiles and Clothing has but one laboratory with accommodations for twelve students which has been adequate for space and equipment until the present time. This year's increased enrollment in Home Economics will mean that additional space and equipment will be necessary within the next two years, or the department cannot take care of the students in the required courses, without consideration for those courses which should be offered as electives.

The Department of Foods and Cookery gives courses in the choice, preparation, service and preservation of foods, and in nutrition and dietetics.

This department also has but one small laboratory which was furnished four years ago with old and inadequate equipment, left over from previous summer schools. From lack of funds, only small equipment has been added since that time.

The Department of Foods and Cookery has also added new courses, and since foods courses require more than the usual amount of laboratory work, this department cannot within the next two years, unless more facilities are added, accommodate as many students as the above-mentioned Department of Textiles and Clothing.

The Department of Hygiene and Health has offered as yet, but one course, a course in personal hygiene, but will offer this year, courses in home nursing and care of the sick, and in the physical care of the child.

Further development and new courses in this department are being planned for the coming two years.

The purpose of the Department of Home and Institutional Management is twofold. First the management of the dining hall and laundry, and any other parts of the University that could be placed to advantage under such a department.

The dining hall and laundry are housed in old and low frame buildings almost past repair and entirely inadequate for the services required of them. Although some new equipment has been added and the most necessary of repairs made to the buildings, both the dining hall and the laundry should be replaced by new buildings, as soon as possible.

The second purpose of the department of Home and Institutional Management is to train Home Economics students in the administration of the household; in the home, or in an institution; the latter as institutional, cafeteria, or tearoom directors, or as heads of dietary departments in hospitals.

For three years this department has been successfully training Home Economics students in the administration of the affairs of the home, in the home management house, where six students do practical housekeeping for a period of several weeks, during their senior year. Plans for this work are gradually being changed and enlarged with each year's work.

A survey course in institutional management is the only work in the training of students in institutional management that the department can offer until a new dining hall and laundry, where the practical part of the work should be carried out, are built.

The department has had many calls for people trained in institutional management, and should be able to develop this side of the work to great success, since there are so many institutions in nearby cities to furnish practice fields while students are in training and positions for them after graduation.

The College of Home Economics should, besides the regular ones, offer as electives, courses in Home Economics, to students who are taking their major work in other colleges within the University, and such plans are being made, to be put into effect with the addition of better facilities.

The members of the Home Economics faculty feel that every woman who is a student at the University, and who so desires, should be able to have at least a survey course in Home Economics before graduating, since she should have some knowledge of the art of home-making, although she may plan to earn her living in other ways.

The increased enrollment and the new courses in Home Economics together with a further development of the work previously mentioned, will necessitate the addition at least of one full-time professor and two instructors to the faculty of the College of Home Economics within the next two or three years.

Respectfully submitted,

MARIE MOUNT, *Dean*.

The School of Medicine and College of Physicians and Surgeons

*The President of the University,
College Park, Md.*

Sir: The work of the Medical School during the years 1921-22 and 1922-23 has included the usual activities connected with undergraduate teaching of medical students, the conduct of the Medical and Surgical activities of the University Hospital and Dispensary, and the supervision by our teaching body of the Medical and Surgical activities of the Mercy Hospital and Dispensary.

Students numbered in 1921-22, 299, and in 1922-23, 336. With the present laboratory and clinical facilities, the student body should probably be limited to 300.

There are about two hundred teachers in the school, of whom only thirty-six are paid; of the paid teachers, only twelve are full time, four are "full half time," and twenty part-time teachers, receiving only nominal salaries. The average remuneration of the full-time teachers is less than \$3,000 per year.

There are four "full half time" teachers, two in Medicine, one in Physiology and one in Physiological Chemistry.

Our laboratory facilities, particularly in the matter of space, should be increased by at least fifty per cent, and our teaching force increased by at least four additional full-time and several part-time teachers. One of the most important needs of the laboratories is proper housing and care of the animals needed for experimentation.

Our clinical facilities need to be increased by additional free beds in the hospital. Additional beds are especially needed for medical cases both for adults and children. Our dispensary clinic is ample as to the number of cases, but lamentably inadequate as to space. The tremendous scope and growth of the department is shown by a comparison of reports of May, 1923, and of October, 1921:

UNIVERSITY HOSPITAL DISPENSARY REPORT

May, 1923

Department	New Cases	Old Cases	Total
Pediatrics	181	1180	1361
Surgery	158	619	777
Dermatology	264	375	639
Eye and Ear	179	374	553
Medicine	124	406	530
Obstetrics	137	345	482
Genito Urinary	66	343	409
Orthopedic	26	222	248
Gynecology	80	180	260
Nose and Throat	79	108	187
Neurology	27	118	145
Gastro Intestinal	22	90	112
Tuberculosis	15	17	32
Rectal	8	10	18
Psychiatry	5	12	17
Dental	7	3	10
Cystoscopy	3	7	10
	<hr/> 1381	<hr/> 4409	<hr/> 5790

UNIVERSITY HOSPITAL DISPENSARY REPORT

October, 1921

Department	New Cases	Old Cases	Total
Pediatrics	129	768	897
Dermatology	150	415	656
Gynecology	164	356	520
Surgical	118	361	479
Genito Urinary	31	400	431
Obstetrics	113	314	427
Ophthalmology	84	218	302
Medical	60	216	276
Neurology	7	164	171
Orthopedics	9	130	139
Laryngology	44	93	137
Gastro Intestinal	17	70	87
Tuberculosis	10	14	24
Proctology	7	11	18
Psychiatric	1	1	2
	<hr/> 944	<hr/> 3531	<hr/> 4475

With the establishment at the University Hospital of the State Venereal Disease Clinic which will be accomplished in November of this year, the University Hospital Dispensary will care for about 85,000 cases yearly, making it one of the largest dispensary clinics in the country.

New obstetrical quarters in the dispensary established recently have added much to the usefulness of the department. New equipment and a thoroughly reorganized X-ray department has made this a thoroughly modern and efficient aid to the conduct of the Hospital.

A new accident room has been built, increasing greatly the facility with which these important cases can be handled.

In connection with the State Board of Mental Hygiene, our Department of Psychiatry has established a Mental Hygiene Clinic for the early recognition and treatment of mental conditions. The proper development of this clinic should result not only in preventing many of these cases from becoming helpless and dependent in later years, but, in addition, relieve the State of the burden of their care.

The Venereal Disease Clinic of the State Department of Health is being moved to the University. This will add much to the congestion of the present clinic and adequate quarters should be provided for this clinic. About 20,000 visits a year are paid by the patients of this clinic. To properly supervise these cases and help to remove so great a menace from the citizenship of the State, is one of the most important functions of the school.

The library is growing slowly and has been improved by the addition of new shelving. It needs greatly enlarged facilities. It is shared by the Medical, Law, Dental and Pharmacy Departments, and its facilities would be taxed to accommodate any one of them.

One of the most important functions undertaken by the school during the last two years has been the establishment of Extension Courses for General Practitioners. At present, this work consist of:

(a) Clinics in Medicine, Surgery, Obstetrics and Special Subjects to general practitioners. These are held every Thursday afternoon during the fall and winter, and have been attended by an average of about two hundred physicians, many of whom are from the rural districts. These clinics, as the attendance shows, have been enthusiastically received and will, no doubt, become a permanent part of the Extension Course.

(b) Short Review Courses in Medicine, Surgery and the Specialties, during the early summer for general practitioners. These continue daily for one month. They have been well attended and will probably become more and more useful as the scope of these clinics is widened.

(c) Extra-rural Teaching. Short courses and numerous clinics have been given by members of the teaching staff of the University in various towns throughout the counties of Maryland when requested to do so by members of the local County Medical Societies.

The course in Neurology in Cumberland, given in September of this year, was especially successful, having been attended by an average of thirty-five physicians daily, some of whom traveled eighty miles daily to attend the course.

This feature of the school's service has had a steady growth and as financial support is available will probably become of constantly greater usefulness to the practitioners of the State and hence to the general public.

In conclusion we wish to state that the Medical School is in a position to render the most valuable assistance to the practioners of the State and through them bring whatever benefits it may to the various communities which they serve. These benefits should be and can be made easily available. The school is anxious to bring this about and the staff stands ready to co-operate with the physicians of the State in helping to solve any of the problems which may confront them.

Respectfully submitted,

J. M. H. ROWLAND.
Dean.

The School of Pharmacy

*The President of the University,
College Park, Md.*

Sir: In the last biennial report submitted it was stated that our course had been put upon a strictly collegiate basis both as to entrance requirement and subject-matter, and that this was a decided step in advance. Judging from the growth of the school since that time, these improvements have made a strong appeal and have justified their adoption.

For the session of 1921-1922 our permanent enrollment was 93, for 1922-1923 it was 145 and for the current session it is 188, representing a growth of slightly more than 100 per cent in two years.

It was our hope to take over during this biennium the pharmaceutical work of the Hospital, Medical and Dental Dispensaries and Clinics, and to arrange for some extension work in the counties of the State, but the exceptional increase in our enrollment has taxed our resources and personnel to such an extent as to make these added services impossible.

The Pharmacy School received no direct aid in the last budget, but has had assistance from the College of Arts and Sciences to the extent of \$4,100 annually during this biennium. In addition it received \$3,150 for new equipment from the bond issue for this purpose.

Outside of these aids the school has had to meet the increased demand for its services entirely from its own resources with the inevitable result that it could not do so in an entirely satisfactory manner.

Foreseeing the increased enrollment, the Schools of Dentistry and Pharmacy arranged during the summer of 1922 to purchase, remodel and equip as best they could the property formerly occupied by the Emanuel's Ev. German Church on Greene street, and only the securing of this additional space made it possible for the school to accommodate the enlarged student body. All the available space and equipment is now badly overtaxed and many classes must be taught in sections with increased expense and additional tax upon our teaching staff.

From all indications the attendance will continue to increase for some time at least, as the school cannot now supply the demands for its graduates. Several reasons for this may be mentioned.

The Bureau of Food and Drugs of the State Board of Health is enforcing more strictly than ever the requirements of the Pharmacy

Law that pharmacies may be conducted only by those properly equipped educationally and otherwise.

The cities of the State and particularly their suburbs are demanding more adequate pharmaceutical service.

The towns and villages are growing and among their first needs is a properly equipped pharmacy.

These conditions have materially to do with the betterment of public health as well as with the comfort and convenience of the citizens of the State.

In addition, the large manufacturing and wholesale drug interests are looking to the School of Pharmacy for more and more service, which we are anxious to furnish as these business enterprises are of great economical importance to the State. This year the school could not supply the demand from these concerns for graduates properly trained for their work.

With proper personnel and equipment, the school could also materially assist the public clinics, free dispensaries and other charitable institutions in their work so far as their pharmaceutical requirements are concerned.

In accordance with the requirement adopted by the American Conference of Pharmaceutical Faculties and approved by the National Associations of Board of Pharmacy, the minimum course in pharmacy will be three years, beginning in 1925. This change will somewhat increase the expense per student for the school, but will give opportunity for much more thorough training.

The National Association of Boards of Pharmacy have also adopted more stringent rules covering the recognition of schools, to be put into effect in 1924, but this school, I am glad to be able to state, already meets all of these demands.

The school continues to have the helpful interest of the Maryland Pharmaceutical Association, especially through its Committee on the School of Pharmacy, and work in the closest co-operation with this organization.

The requests of the school for increased space, equipment and finances are only in proportion to the increase in its enrollment and in the demand for its services.

If it becomes necessary to increase the fees sufficiently to provide these additional facilities, the burden will fall too heavily upon many very deserving students and will, of course, limit the services we can render to the public and to the important pharmaceutical interests of Maryland.

Respectfully submitted,

E. F. KELLY, *Dean.*

The School of Law

*The President of the University,
College Park, Md.*

Sir: The last biennial report of the School of Law calls attention to the greatly increased attendance and the lack of adequate lecture halls to accommodate the students. Since that report the attendance has continued to increase and the needs referred to therein have become all the more urgent. During the year 1922-23 the total registration for all classes was 563. During the present session the registration for the first semester is 552, and the prospect for additional students at the beginning of the second semester indicates that this figure will be materially increased.

The Law Building contains only one lecture hall of sufficient size to accommodate even the smallest of the three law classes and it is crowded to capacity. The other two classes are using the lecture halls in the Medical Building, but neither of these can accommodate the first-year class and many students were refused admission at the beginning of the present session for lack of accommodations. Since it was decided to sell the College of Physicians and Surgeons on the corner of Calvert and Saratoga streets, to which I referred in my last report, the University has no building which can accommodate the growing demands of the school and plans for a new building must be made.

The increased attendance in all of the Baltimore schools has rendered the present library, which serves all of them, woefully inadequate. During the summer just passed, a balcony was built in the library which afforded increased space, but even with this the library is taxed to the utmost, and additional provisions will have to be made for its expansion. At the beginning of the present session the Law Faculty increased the tuition fee in the Law School with a view of providing funds for the building-up of a good law library. At the present time, however, very little can be done along this line, because of the lack of shelving space in the present library to accommodate any additions to the number of volumes. Provisions should be made in the new building for the Law School to accommodate the law library, and its removal from the present library building will go far to enable the library to properly serve the other students.

At the beginning of the present session, the requirements for admission to the Law School were increased, so that at the present time only students who are graduates of approved high schools or who

passed the entrance examination covering fifteen units of work and given by the University itself, can enter. The faculty feels the desirability of further raising the requirements for admission to accord more fully with those of the better Law Schools and to increase the standard of the legal profession in this State. The American Bar Association has gone on record as favoring entrance requirements to Law Schools of at least two years college work and is active in its endeavor to procure the raising of the preliminary educational requirements for admission to the bar. The faculty is in full sympathy with the movement, but as this is the only Law School in the State and is a State institution, has not felt that it could increase its own requirements for admission so far in advance of the legal requirements for admission to the bar. It is at the present time giving its earnest consideration to the question.

The great increase of attendance at the Law School and the desire of the faculty to improve the standards of the school have greatly multiplied the problems of the school, and a full-time instructor, who, in addition to his lecture work, devotes his entire time to the Law School, has been secured. A revision of the curriculum was made at the beginning of the present session, in which the time devoted to class-room instruction in many of the subjects was materially increased. The faculty is bending every effort to raise the standard of work done in the school and feels that much progress is being made along this line.

Respectfully submitted,

HENRY D. HARLAN, *Dean.*

The School of Dentistry

*The President of the University,
College Park, Md.*

The School of Dentistry has been enabled to enlarge somewhat its policies and usefulness since the last biennial report. This result was brought about through a working agreement entered into with the Arts and Science Department at College Park whereby instruction has been provided in certain courses which in quantity and quality is meant to parallel the work in the same subjects in the undergraduate courses of the University. This policy has worked admirably and greatly strengthened our curriculum.

In the particular subjects of English, Physics and Chemistry, subjects which under rule of a national governing body we are obliged to provide for our students, the improvement has been particularly noticeable. Several outstanding events are here recorded as having resulted during the present biennium.

First—The joint purchase by the Schools of Dentistry and Pharmacy of Emanuel Lutheran Church and parsonage property which is separated from what is known as our Dental Building by an alley, the cost of same being \$25,000, in fee. The additional space provided by such acquirement has provided three good sized lecture rooms, two chemical laboratories, one pharmacy laboratory and several stock rooms, also a Dean's office and toilets. Conversion of this church property to school use was made at an expense to the two schools amounting in round figures to about \$17,500. This expansion for the benefit of the two schools named enabled each to provide facilities for an increased number of students to justify the financial outlay.

Second—The Lions Club of Baltimore, a civic organization, became interested in the establishment of a Children's Dental Clinic in connection with regular public clinic of the Dental School, and through an engagement with the United States Marine Band for a concert in Baltimore City on October 18, 1922, raised sufficient funds to fully equip and install eleven dental chairs. The purchase of this equipment was made through the Surgeon General's Office in Washington, D. C., and at a nominal cost in comparison with what would have been required had it been necessary to secure same in an open market. It is estimated that service to from 30 to 40 school children per day can be given as a result of this splendid gift from the Lions Club of Baltimore.

Third—The Baltimore College of Dental Surgery through direct purchase was acquired by the University on June 15th, 1923. This institution was granted a charter in 1839 and is known internationally as being the first Dental College established in the world. Its historic position is regarded as valuable. Its museum is made up of specimens of rare quality and by the absorption of this old institution, the University now has eliminated all local competition in the field of Dental training. For some years prior to 1913 Baltimore supported three Schools of Dentistry. Now all are under one management.

For the present we are carrying too many students for our facilities, but this condition must of necessity prevail for one or more sessions owing to the moral obligation we are under to continue the student body taken over through the acquirement of the former Baltimore College of Dental Surgery. The enrollment for 1923-1924 totals about 480.

The need for improved facilities as set out in our last report is still an urgent necessity. Some slight relief was given through the allotment of a comparatively small sum to this school out of the University appropriation for the present biennium.

Our public clinics are giving excellent service to the people of the city particularly, and, through a tabulation recently made it was discovered that 20 per cent of such service is being given to the people of the counties adjacent to the city. It is estimated that 60,000 daily visits are made to our public Dental Clinics during the year.

Very truly,

T. O. HEATWOLE, *Acting Dean.*

The Extension Service

*The President of the University,
College Park, Md.*

Sir: Uncertainty has marked the past two years in the agriculture of Maryland. The farming industry has borne the brunt of post-war deflation. Industry in general, apparently more responsive to economic conditions than agriculture, suffered a short period of depression and quickly revived. Agriculture continues to feel the pinch of financial stringency.

Confronted with perplexing difficulties, agriculture has been awaiting patiently for a hopeful change in the ill-adjusted economic situation. Here and there, during the past two years, the scale of prices received by farmers has been revised upward but not sufficiently to restore agriculture to a firm financial footing. On the other hand, there has been but a slight revision downward in prices of things the farmer is called upon to purchase. Agriculture, consequently, continues to labor under a financial disadvantage.

The result has been a period of uncertainty. The incentive for definite progress along definite lines has been lacking. Instead, readjustment in farming operations has been necessary; curtailed expenditures have been imperative; and in some cases lower living standards have been imposed upon farmers who have felt the situation most acutely. Everywhere there has been evidence of retrenchment, much of it of a healthy kind looking to the production of agricultural products at minimum cost, and some of it at the expense of physical farm equipment such as fences, buildings and soil fertility.

Fortunately, Maryland has been less subject to serious effects resulting from this situation than many other States. The diversity of agriculture possible in this State has prevented anything like the difficult situation prevalent in many regions where a one-crop system prevails. The nearby markets have likewise had a bouyant effect on prices while affording an opportunity for the profitable production of many special emergency crops. There has been little or no inflation in land values and farms that have changed hands in recent years are not staggering under an impossible capital investment.

No unusual or radical readjustments of farming operations in the State have been necessary. There has been no alarming reduction in acreages and little or no abandonment of farming land. Labor has been high priced and hard to obtain and has accounted for the substitution of crops requiring little labor for others that are more

exacting in this respect. Production of crops and livestock has not noticeably declined and it is apparent that better methods of farming and more general use of labor-saving machinery have at least partially offset the disadvantages of a labor shortage.

The financial situation, however, has been anything but encouraging. Progress in agriculture, like progress in any other industry, is dependent in large measure upon the incentive for it. Under the circumstances there has been no inducement for farmers to increase production by expansion of their operations. This has been true in practically all lines of farming, except dairying and poultry raising.

ORGANIZATION AND CO-OPERATION

Despite the handicap of unfavorable economic conditions, there are striking evidences that the agriculture of the State has made distinct progress during the past two years. Methods of production have improved; organization has made rapid strides; co-operative buying and selling have become more general; less profitable crops have given place to those yielding better returns; and more effort has been made to command top market prices by the standardization and careful grading of farm products. All of this has resulted in an improved agriculture for the State—an agriculture that is more nearly ready than ever before to sustain the hardships of depression and to reap the benefits of any improvement in conditions.

Because during the past two years the attention of the entire country has been directed to the value of organization and co-operation as corrective measures for the unusual agricultural situation, it might be said that one of the most valuable contributions of the Extension Service to the agricultural development of the State during that period has been its persistent effort along these lines. Its help and assistance in the formation, the maintenance and the proper functioning of agricultural organizations have been important elements in the success of practically every agricultural organization and co-operative association in the State.

These organizations are today operating in every part of Maryland. Some of them are engaged in co-operative selling of farm products valued at millions of dollars annually; others in co-operative buying of commodities which each year total hundreds of thousand of dollars; and all of them are striving to place agriculture on a higher plane, increase its recognition and influence and develop its social life.

Within the last two years the farm bureau movement in the State has shown pronounced strength. The affiliation with the American Farm Bureau Federation, established by the Maryland Agricultural Society, has been strengthened by the formation of local and county farm bureaus in thirteen counties of the State. At the last meeting of the Maryland Agricultural Society, this organization together with the seven State associations affiliated with it, united

forces with the farm bureau under the name of the Maryland Agricultural Society—The Maryland Farm Bureau Federation, thus giving to the State the largest and most compact organization of farmers in its history.

This organization has progressed in harmony with the State Grange and together these two organizations have been moving forward in their great work of promoting unity of thought and action among farmers in Maryland. The result has been an increase of confidence in the benefits of organization, a spread of organization influence to greater numbers of farmers and the stimulation of numerous worth-while co-operative activities. The past two years must be regarded as a most auspicious period from the organization standpoint.

INCREASED YIELDS PER ACRE ON MAJOR CROPS

There is no more striking illustration of the character of the progress which agriculture in the State has been making than the record of the acre yields of corn which reached their maximum in 1922. Ever since 1890, when the average yields of corn per acre in Maryland were between 20 and 25 bushels, Maryland farmers have steadily and consistently been improving the quality of their seed and their methods of culture until in 1922 the average yield mounted to the top figure of 40 bushels per acre. This is 12 bushels higher than the average for the United States for the same year and nearly 18 bushels above the average production of the State 32 years ago. It shows that merely by applying better cultural methods, the farmers of Maryland have been enabled to raise on 635,000 acres which was the acreage planted in 1922, 11,430,000 more bushels of corn than would have been possible in 1890. It shows that at 68 cents a bushel, the farm price for corn during December, 1922, the leading agricultural crop of the State has been increased in value more than \$7,500,000. Increases of equally striking significance could be cited for other field crops grown in the State.

Side by side with the progress which the average farmer of Maryland has made in the production of corn, is the no less noteworthy achievement which has been accomplished in the State in the production of pure-bred seed corn. The production of high-yielding strains of pure-bred seed corn has become an important business, particularly in Harford and Cecil Counties. Recognition of the skill and ability which Maryland growers have developed in this industry during recent years came in unmistakable terms in 1921 and 1922, when entries from this State in the International Grain and Hay Show at Chicago, competing against the finest exhibits of the experienced corn breeders of the Corn Belt States, won sufficient prizes to entitle this State to a place in the front rank of quality corn States. Maryland corn breeders won seventeen such prizes in 1921 and in 1922 received a

total of twenty-two awards, among which was the first premium for the best ten ears of yellow corn exhibited in Region 4. The fact that Maryland, next to Indiana, won more prizes on the last occasion than any other State exhibiting, must be recognized as a remarkable achievement, especially when it is recalled that Maryland is a State of comparatively small area and belongs to the Atlantic Coast territory, not generally regarded as a leading corn-producing region.

INCREASE IN LEGUMINOUS CROPS AND VEGETABLES

Another indication of the gradual progress which has taken place in the agriculture of Maryland, is the constantly increasing acreage devoted to the legume crops. Unfortunately, figures are not available to show just how great this increase has been in the past two years. It is estimated, however, that the area planted to soybeans alone in 1922 totaled 40,000 acres. While this is only an estimate, it is a well-known fact that legume crops, and particularly soybeans, have come to occupy an increasingly prominent place in the agriculture of the State. In Southern Maryland, Japan Clover has been introduced and is meeting a long-felt want. In other parts of the State, alfalfa is now regarded as a crop of prime importance and is being grown more extensively. Clovers and cowpeas have also been planted in increasing quantities. An indication of the growing favor of legume crops in the State during recent years can be obtained from a glance at the census figures which show that for clover the acreage during the ten years between 1909 and 1919 increased from 26,545 acres to 41,250 acres, or 55.4 per cent; that for alfalfa the acreage increased from 3,188 acres to 11,909, or 273.6 per cent; and that for small grains and legumes cut for hay the acreage increased from 8,846 acres to 21,471 acres, or 142.7 per cent. This increase in legume crops has continued since the census figures were taken. What it has meant to the increased wealth of agriculture is impossible to estimate. Undoubtedly it has been an important factor in the expansion and improvement of the dairy industry and has had a value, impossible to measure, in maintaining and improving soil fertility.

Another very marked advance in the agriculture of the State is apparent in the position which Maryland now occupies in the production of vegetables. Notwithstanding the comparatively small area of the State, Maryland is now third in the acreage devoted to vegetables, exclusive of white and sweet potatoes, raised for sale. Nearly 120,000 acres of land in Maryland are now annually devoted to the commercial production of vegetables, other than white and sweet potatoes, indicating that farmers are taking advantage of the State's proximity to large nearby markets and engaging more generally in the production of the higher valued agricultural products.

CANNING CROPS

Closely linked to the expansion of this phase of agriculture, has been the growth of the canning industry and the consequent increase in the acreage devoted to canning crops. While the canning industry in the State has been subjected to severe financial strain during the past few years and economic conditions have seriously curtailed the production of canning crops, the State has nevertheless maintained its rank as one of the leading States in this important industry. Moreover, the past two years, although not notably profitable ones have witnessed a distinct advance in the production of canning crops, because of the increased attention directed to reducing production costs. Attention has particularly been centered on the tomato crop, the largest and most important of the canning crops, through successful demonstrations which have illustrated how larger acre yields can bring down the cost of production to meet prevailing economic conditions. The practical character of these demonstrations has been established. They have been undertaken successfully in all of the more important tomato-growing sections of the State and the Extension Service will continue to extend their scope.

DEVELOPMENT OF THE DAIRY INDUSTRY

Most important to the welfare of the State during the recent period of depression has been the sound foundation on which the dairy industry has been placed. The progress in this industry has been safe and conservative and it is a noteworthy fact in communities where a general system of farming has been practiced that dairying has served as the principal buffer against the effects of hard times. Not a little of the success which has come to this industry has been due to the substantial organizations which have been erected around it. During the past two years the advancement in the industry has continued. Organizations have been strengthened, better producing animals have been introduced and the whole industry has gone forward, despite the fact that it, too, has felt the ill-effects of lowered prices.

In this expansion the Extension Service has rendered valuable assistance. Through its efforts pure-bred dairy cattle have become more numerous, better feeding methods have become more general and cows capable of increased milk production have been bred and introduced. Cow-testing associations in the important dairying counties of the State have given farmers an opportunity to discover the profit and loss in their own herds and to eliminate unprofitable animals. Pure-bred bulls and hundreds of cows of improved milking qualities have been selected by specialists and county agents for farmers who have desired to improve their herds. Through the agricultural boys' club work alone, the Extension Service has been instrumental in introducing several hundred pure-bred dairy calves to Maryland farms.

New milk-producing territories, notably Dorchester County on the Eastern Shore and Southern Maryland on the Western Shore, have been opened up and are being developed as a result of work by the Extension Service. Support has been given to the three big co-operative dairying marketing associations in the State which are now doing more than seven million dollars worth of business annually for their Maryland members. Likewise, the Extension Service has been an important factor in arousing interest and in planning campaigns for the eradication of bovine tuberculosis and has thus served both the farmer and the city consumer of milk.

BOYS' AND GIRLS' CLUB WORK

Progress of a slightly different character, but of no less significance, is noted in the record of the agricultural club boys of the State who for two years in succession brought national and international dairy cattle judging honors to Maryland. The team from Harford County, winners of the dairy cattle judging contest at the National Dairy Show in 1922, were sent to England to compete for the international gold cup which was first brought to America by another Maryland team the previous year. For the second time Maryland won the international contest. This splendid showing by club boys who are receiving their instruction at the hands of the Extension Service is an indication that knowledge is reaching out to agriculture in all its branches and that a sound foundation for the future agriculture of the State is being laid. Results of club work are becoming increasingly evident. Throughout the State now there are striking examples of boys who—starting as club members—have developed farm enterprises of considerable magnitude and profit.

WOMEN'S WORK

In its work with the rural women of the State, the Extension Service has rendered valuable assistance during the past two years by encouraging and promoting community organizations. Through organizations of this character rural women have been able to have an increasingly prominent voice in local and community affairs. With these local units federated into county organizations in a number of counties, rural women are now in position to command a hearing on all important questions concerning the welfare of the county.

The specialists and home demonstration agents have likewise been able to render more efficient service through these organizations of rural women. New and improved methods of household management, tested processes for canning, cooking and the preserving of foods, time and money-saving hints in sewing, in making clothing and millinery, and plans for making home life in the country more attractive and pleasant have been more widely disseminated than ever before.

ADVERTISING MARYLAND

The Extension Service, it is felt, has materially aided in advertising Maryland's agricultural resources and possibilities during the past two years. It has assisted in locating, collecting and preparing agricultural exhibits which have been shown at important public events throughout the country by the Southern Maryland Immigration Commission. It has likewise assisted the commission in the preparation of advertising material and literature and whenever possible, has helped to locate lands suitable for new residents. While the chief object of the Southern Maryland Immigration Commission has been to attract farmers to its own immediate section of Maryland, it has done much to advertise the general resources of the State and to impress the quality of its agriculture upon the public.

The two national and international contests which were won by agricultural club boys from this State did much to attract the attention of the country to the dairy resources of Maryland. Similarly the State came into prominence because of the quality of its seed corn, following the successful exhibits at the International Grain and Hay Show in 1921 and 1922.

The Extension Service probably has been able to render a greater service and a more appreciated service during the past two years than ever before in its history. The times were such as to call for modifications of farming methods, changes in rotations of crops and the employment of every factor looking to economical production and the husbanding of resources. Conditions called for expert knowledge, expert advice and proven careful practice; and it is gratifying to know that farmers and home makers have made increasing demands upon the Service, thereby showing their confidence in the Service and appreciation of its efforts.

In the following more-detailed review of the various lines of work undertaken by the Extension Service, only facts and figures pertaining to the year 1922 are given. Detailed reports of the work for 1923 will not be available until after January, 1924.

ADMINISTRATION

The administration of the Extension Service has been conducted as heretofore. There has been no change in the personnel of supervisory officials. It was hoped that we would be able to employ a district agent for men's work, but available funds would not permit. Splendid co-operation exists among our forces and good progress has been made in the development of programs of work and leaders to carry out community projects.

The relation of the Service to other departments and divisions of the institution are the most cordial and there is mutual co-operation. A free exchange in assistance during stressing periods is practiced and yet it is the rule to have whole-time men for each class of work.

As the agricultural activities of the State are placed under one board, the State Board of Agriculture, which also serves as the Board of Regents for the University, there are no difficulties in jurisdiction in the conduct of our work.

Our relations with the State Department of Public Instruction are co-operative and working agreements in several counties for the conduct of boys' and girls' club work aid in the development of the club programs.

RELATIONS WITH FARM ORGANIZATIONS

The relations of the Service with all the State farm organizations have been sympathetic and helpful. In no case has the service made discrimination. As a public educational agency, supported wholly from public funds, the policy has been to co-operate and serve all farm organizations. Every effort has been made to co-operate in the reorganization of the Maryland Agricultural Society, the Maryland Farm Bureau Federation, which has affiliated with it the six educational commodity organizations, all of which have greatly aided in promoting the industries they represent. These organizations will continue to be associated with the reorganized society. The Service has aided as far as possible in the development of Grange work in its relation to community building and other social and educational activities.

Up to this time there has been no division among the agricultural forces in the State and this unity has been a great help in developing a State-wide agricultural program.

FINANCIAL

A detailed statement of the expenditure of the funds available for Extension work is given in the financial section of this report.

Notwithstanding the economic situation and the universal demand for a reduction of taxes by farmers, there has been no falling off in the appropriations for county agent work in any of the counties. In fact, there has been a reasonable increase. This, it is felt, is a tribute to the efficiency of the service as no agency is so responsive to public demands as is a county board of commissioners. We have established what we believe to be a wise policy in having the agents supported only from public funds, viz.: Federal, State and county appropriations.

The organization of the Extension office at headquarters is admirable and efficient. A splendid corps of stenographers and clerks working in the central office under the general supervision of Miss K. G. Connolly serves to dispatch the work of the officials and specialists. The keeping of records and financial accounts for the Service is a difficult task on account of the different funds, projects and fiscal requirements. A total of 44,368 first-class letters have been mailed from

headquarters during the year, while the total pieces of mail sent from the office have been about 65,404.

In concluding this discussion, I am glad again to acknowledge my obligations to all members of the Service for their cordial co-operation and loyal support in directing the work of the organization. We are also under obligations to the officers and staff of the office of Co-operative Extension Work of the United States Department of Agriculture for the splendid co-operation which they have given to the work in Maryland.

PUBLICATIONS

During the past two years the Service has published 11 bulletins comprising 30,000 copies and 16 circulars, information cards and spray calendars with 40,500 copies. In addition, the Extension Service News, a monthly publication, with a circulation of 9,000 copies, has been issued regularly with a total for the two years of 216,500 copies, comprising 866,000 pages. Mr. M. D. Bowers, specialist in agricultural journalism, has rendered efficient service in preparing copy for the Extension Service News and other press matter for daily, weekly and monthly publications.

PROJECTS

The work of the Service is conducted under approved projects. These projects, covering the work of county agents and specialists, are approved by the Office of Co-operative Extension Work, United States Department of Agriculture. In this summarized discussion of the work of the Service, it is impossible to give the progress made in each county. It must be understood that both agents and specialists are mutually responsible and share equal credit in the results obtained.

COUNTY DEMONSTRATION WORK

A study of the annual reports of the agents shows that they set out at the beginning of a year with definite programs for the improvement of agriculture in the various counties. These programs of work vary as to the outstanding needs of the county. In this connection, it should be said that the county agent was never so valuable to the farmers of the State as during the past two years. The agent has been at the farmers' call for assistance during this stressing period. Fortunately, we have been able to maintain an agent in each of the twenty-three counties, together with two local agents for negro work which in itself demonstrates the support that the farmers are giving to the work.

The agents report splendid progress in co-operative marketing, which involves the raising of better crops and livestock, standardization and grading. These are the fundamentals of successful market-

ing if there is erected a proper organization through which the products can be merchandized.

During the year of 1922 a total of 18,274 visits were made by the agents to farmers on their farms. Oftentimes the agents were accompanied by specialists in carrying out joint projects. Forty-nine thousand five hundred and forty-seven farmers called upon the agents at their offices for advice. The agents traveled 194,907 miles in the counties and a total of 4,273 meetings were held with an attendance of approximately 247,169. The assistant director, Dr. Bomberger, has ably assisted in the administration and supervision of the county agent force.

A summary of demonstrations and other activities in the annual report gives an idea of the work of the Service reported by the county agents in 1922.

The following agents are serving in their respective counties:

Name	County	Headquarters
R. F. McHenry.....	Alleghany.....	Cumberland
G. W. Norris.....	Anne Arundel.....	Annapolis
W. C. Rohde.....	Baltimore.....	Towson
J. H. Drury.....	Calvert.....	Chaney
L. M. Goodwin.....	Caroline.....	Denton
F. W. Fuller.....	Carroll.....	Westminster
A. D. Radebaugh.....	Cecil.....	Elkton
J. P. Burdette.....	Charles.....	La Plata
E. W. Montell.....	Dorchester.....	Cambridge
John McGill, Jr.....	Frederick.....	Frederick
W. C. Jester.....	Garrett.....	Oakland
B. B. Derrick.....	Harford.....	Bel Air
M. H. Fairbank.....	Howard.....	Ellicott City
H. B. Derrick.....	Kent.....	Chestertown
W. C. Snarr.....	Montgomery.....	Rockville
W. B. Posey.....	Prince George's.....	Upper Marlboro
E. W. Grubb.....	Queen Anne's.....	Centreville
G. F. Wathen.....	St. Mary's.....	Loveville
C. Z. Keller.....	Somerset.....	Princess Anne
E. P. Walls.....	Talbot.....	Easton
M. D. Moore.....	Washington.....	Hagerstown
G. R. Cobb.....	Wicomico.....	Salisbury
E. I. Oswald.....	Worcester.....	Snow Hill

Local Agents

J. F. Armstrong (col.).....	Southern Maryland.....	Seat Pleasant
L. H. Martin (col.).....	Eastern Shore.....	Princess Anne

CO-OPERATIVE BUYING AND SELLING BY FARMERS

Reports from county agents show that during the past year farmers in the various counties through their local or county organizations purchased farm supplies to the amount of \$570,368.33 and sold farm products to the amount of \$3,961,503.09. The estimated saving to the farmers on these transactions was \$748,094.54, or about 19 per cent. The principal commodities purchased were fertilizers, lime, seeds, binder twine, coal, machinery, etc. The principal farm products sold were dairy products, tobacco, truck crops, canning crops, small fruits and wool.

NEGRO WORK

The negro work has been continued as heretofore with two negro agents, each centered in a region of the State where they can serve the largest number of farmers. There is, no doubt, opportunity for much greater service to the negro farmers. A survey of the situation in the State made by a specialist from the United States Department of Agriculture at our request, reveals a need for much greater development of this phase of our work if funds permitted. It is hoped that we will be in position to meet this need in the near future. L. H. Martin, agent in the southern Eastern Shore, submits a splendid report showing the accomplishments of demonstration work with negro farmers. These two agents report having conducted 582 demonstrations in farm crops and livestock during 1922. They visited 2216 colored farmers and traveled 14,400 miles. Fine community exhibits have been held, which have served to increase the interest of the farmers in their respective communities and good progress has been made in colored boys' club work.

HOME DEMONSTRATION WORK

Miss V. M. Kellar is in charge of the home demonstration project. This work is no longer in its pioneer stage. It has developed by degrees to the place of such usefulness and importance that the people as a whole recognize its value not only to the home, but to the community, the county and the State. Stronger rural women's clubs are being organized in every county and programs of work, with a goal in mind, are carried out in each women's club. County federations of rural women's clubs have been organized and counties have made larger appropriations for the support of home demonstration work.

No change in the plan of organization has been made. The staff of workers has included seventeen county home demonstration agents, one colored worker, two district agents and specialists, one girls' club agent and the State Home Demonstration Agent. The seventeen counties having demonstration agents have helped to finance the work by county appropriations.

There are 110 rural women's clubs, having an enrollment of 3,504, working with the agents. Through these clubs the agents are able to reach a large number of women in their respective counties.

One of the essential factors in the development of the women's club program is a leader for each line of work. These leaders are selected by the club members. They are then trained by the agent or specialist or both. Three-fourths of the clubs have not only reached their goal, but gone beyond it. The local leadership is helping the women to take the initiative and assume some of the responsibilities which the home demonstration agents have heretofore carried. Miss Kellar reports that the women's work is going forward with definite plans and definite results are being obtained.

The following home demonstration agents are employed in their respective counties at the present time:

Name	County	Address
Bessie M. Volk.....	Allegany.....	Cumberland
Mrs. G. Linthicum.....	Anne Arundel.....	Annapolis
Mary Graham.....	Baltimore.....	Towson
Emily C. Kellog.....	Caroline.....	Denton
Isabelle Cobb.....	Carroll.....	Westminster
Lillian Grimm.....	Cecil.....	Elkton
Mrs. E. S. Bohannon.....	Charles.....	La Plata
Sara Coyne.....	Dorchester.....	Cambridge
Elizabeth R. Thompson.....	Frederick.....	Frederick
Susan V. Hill.....	Kent.....	Chestertown
Blanche A. Corwin.....	Montgomery.....	Rockville
Ellen L. Davis.....	Prince George's.....	Hyattsville
Ethel Joy.....	St. Mary's.....	Leonardtown
Mrs. Olive K. Walls.....	Talbot.....	Easton
Susan S. Garberson.....	Washington.....	Hagerstown
Florence H. Mason.....	Wicomico.....	Salisbury
Lucy J. Walter.....	Worcester.....	Snow Hill

Local Agent

Leah D. Woodson (col.)..... Charles & St. Mary's..... La Plata

Garden Specialist

Mrs. Adelaide Derringer..... Administration Building..... Baltimore

GIRLS' CLUB WORK

There has been a growing interest throughout the State in girls' club work which is conducted by the home demonstration agents in each county. Miss Dorthy Emerson succeeded Miss Adice Jones, resigned, as Girls' Club Agent. Special emphasis has been given to developing public demonstration teams. As a result, there were 72

public demonstration teams which were called upon for public meetings. A very successful girls' club week was held at College Park in 1922. A girls' club team was sent to Atlanta to compete in the National Canning Contest. The team won fifth place.

Club camps were held in the following counties in 1922: Alleghany, Caroline, Cecil, Charles, Dorchester, Harford, Prince George's, St. Mary's, Talbot, Washington and Worcester. A great improvement at the camps is reported. These camps have proven to be one of the greatest incentives in club work and one of the best ways of developing leaders which will in turn develop club work in their communities.

A total of 2,710 girls were enrolled in club work. A summary of the results of women's and girls' work is given in the regular annual report.

BOYS' CLUB WORK

Mr. E. G. Jenkins, State Boys' Club Agent, and Mr. P. W. Chichester, Assistant Agent, report that boys' club work has moved forward steadily. An increase of 79 per cent in valuation of products raised and an increase of 71 per cent in returns, are evidence of a most commendable forward step in developing worth-while demonstrations, and indicate advancing efficiency in methods of carrying subject-matter to the boys.

Demonstrations of large scope, such as numbers of high-priced registered cattle and swine, larger acreage of selected seed corn and flock management demonstrations in poultry, and the success in live-stock judging have given greater dignity to club work, caused people of the State to look upon it as a more mature branch of the Extension Service and paved the way for its adoption as a part of the community program of work.

Scores of boys after but three or four years in the clubs now have really valuable holdings of livestock. Some of the animals owned by boys are of such quality that they have been able to win ribbons in open contest at fairs in this and other States, and some of these prize-winning animals have been raised by boys who have had the parent stock in previous club demonstration work.

Exhibits of dairy cattle and swine especially at Timonium Fair and Harford County Fair have been of exceptionally high order. Fifty-one registered heifer calves at the former and 44 registered heifer calves at the latter causing much favorable comment.

The growing interest in poultry is indicated by the fact that there were 286 boys' club members completing demonstrations in 1922 as against 48 the previous year and that the valuation of poultry has increased considerably over 300 per cent in that period. As boys are now reported to be taking over all the swine on the home farm as their particular responsibility, so are boys now beginning to take over the home poultry flock.

The most outstanding accomplishment in Maryland club work in recent years was the success of the livestock judging team of Cecil County, who, by winning first place at the Southeastern Exposition at Atlanta, Ga., in the fall of 1921, were given a trip to Europe and there in contest with the young farmers' club of England, won the first year's contest for the gold cup offered as a prize.

Winning from the thirteen counties contesting at our State Fair last year, a team from Harford County was sent to the National Dairy Show at St. Paul, where, in contest with fourteen other States, it won first place. The team was sent to Europe this past summer and won again over the English team and brought the gold cup back to Maryland for another year.

More than 1,800 boys were engaged in club demonstrations; the value of the products produced is estimated at \$75,696.61. This includes both white and colored boys' activities. The average yield of corn by the boys' club members was 65.56 bushels per acre.

AGRONOMY

Mr. F. W. Oldenburg, specialist in this work, reports that seed corn selection with special reference to root rot was carried on in co-operation with the Extension Pathologist. Fifty-nine demonstrations of this character, involving 463 acres distributed over the State, have been conducted. The demonstrations in 15 counties show an average increased yield of 9 per cent from selected seed over the ordinary run. It would seem that much attention must be given by our corn growers to this project.

Lime Demonstrations—These demonstrations were conducted in co-operation with the Soil Department of the Experiment Station and the Eastern Lime Bureau. Definite card records of the yields of all crops included in the rotation under different treatments were kept for reference. These are the most practical lime demonstrations that we have been able to carry on.

Garlic Eradication—Garlic is undoubtedly the worst weed in Maryland. It not only decreases the yield of wheat and lowers the market value, but it also causes a disagreeable flavor and odor in milk and causes losses to the dairymen. An elaborate campaign was started during 1922 with a view to getting farmers to use selected wheat and to follow the other necessary means for controlling garlic. It is a hard problem on account of common cultural methods and general practices of farmers. A total of 880 farmers have been consulted relative to garlic by the agents; 90 demonstrations were in progress and 45,000 bushels of wheat were cleaned of garlic by farmers. A bulletin machine, together with charts, etc., have been shown at several county fairs, drawing attention to garlic eradication.

Selecting Better Seed Corn—Farmers all over the State have taken greater pains in selecting their seed corn, giving due regard to type,

health, vigor and freedom from disease. Many demonstrations were conducted by the specialist and agents, and field meetings were held when the corn was husked. Many yields in the demonstrations and various county contests exceeded 100 bushels per acre. The winner of a five-acre contest in Harford County had a yield at 110.5 bushels per acre of dry shelled corn.

Pure Bred Corn—The amount of pure bred corn in the State has increased very rapidly. In 1921 Maryland growers won 17 corn prizes and in 1922 they were able to win 22 prizes, including the champion first prize in our district for the best ten ears of Reid's Yellow Dent, at the International Grain and Hay Show.

Continued progress is being made in the growing of more legumes for cover crops for soil building, for hay and for seed. Many farmers are learning to grow and to appreciate the value of soybeans. It is estimated that 40,000 acres of this crop were grown in 1922. The growing of alfalfa is making steady progress in the State and many demonstrations are in progress in nearly all of the counties. In co-operation with the Experiment Station and Crop Improvement Association, nineteen farmers had their seed wheat certified.

ANIMAL HUSBANDRY

Mr. B. E. Carmichael, in charge of this project, reports progress in the development of better livestock in the State. Demonstrations have been successfully conducted in the use of green forage for hogs, although adverse weather conditions, cost of fencing, etc., have prevented many growers from taking up the project. The chief problems attacked were those which have to do with the use of better stock and better methods in the production of animals and animal products. This work has been carried on by advising with agents and farmers, addressing meetings, judging at community shows and county fairs and in promoting animal husbandry work with boys' clubs.

HOG CHOLERA

Dr. I. K. Atherton, in charge of hog cholera control work in the State, reports records of 602 outbreaks of hog cholera from all sources, a slight increase over 1921. Much valuable information regarding the introduction, harboring and spread of the infection has been gained during 1922. The county agents have co-operated heartily with the inspectors in the various regions of the State and in notifying headquarters of outbreaks of the disease. Details of this work will be reported elsewhere in this report.

HORTICULTURE

Mr. S. B. Shaw, specialist in horticulture, reports that the outstanding problem confronting the average Maryland fruit and truck

farmer is to improve the quality and method of handling his commodity so as to insure for him the maximum market price for his product.

Orchard Demonstrations—The classified orchard project demonstrations included ten orchard management demonstrations put on co-operatively with other specialists and forty-two conducted by the specialist and agents. These fifty-two orchard demonstrations were conducted in sixteen counties. Good results were secured where the directions of the specialists and agents were carried out.

Orchard field meetings were conducted in pruning, mixing and application of spray material and in the selection, grading and packing of fruit and vegetables. Sixty-seven pruning demonstrations were conducted in fifteen counties; nine demonstrations in mixing and application of spray material were held in five counties and twelve demonstrations in the selection, grading and packing of fruits and vegetables were conducted in eight counties. A total of eighty-eight field meetings were held with an attendance of 952 persons.

Organization of Fruit Growers—The specialist, in serving as secretary of the State Horticultural Society, has rendered unusual service to the fruit growers of the State. A monthly news letter has been issued giving timely information. This relation between the Society and Extension Service has enabled both organizations to render greater service. Special effort has been made by the specialist to encourage co-operative marketing of fruit.

VEGETABLE AND LANDSCAPE GARDENING

The specialist, Mr. W. R. Ballard, reports that special effort has been made to develop the truck-crop industry in Southern Maryland. The climatic conditions in certain sections of Southern Maryland are such that truck crops can be matured from ten days to two weeks earlier than in those sections immediately surrounding the city of Washington. This project will be pushed in 1923.

The most outstanding demonstration conducted by the Service in any department was with tomatoes in Cecil County in 1922, by the specialist and county agent, Mr. A. D. Radebaugh. Mr. Radebaugh suggested putting on a "demonstration tomato seed bed" upon a large scale. Sixty growers agreed to use the plants from this demonstration bed. One million fifty thousand plants were pulled from this bed and distributed to growers in the county at a cost of forty cents per thousand. These plants were ready to go into the field two weeks before the usual time of setting. The number of field demonstrations in which plants from the "demonstration bed" were used was sixty, and the total acreage in demonstration plots 255. The average yield per acre on the demonstration plots was 290 bushels, while the estimated average yield for the State was only 100 bushels and for Cecil County 125 bushels. The increased yield per acre of demonstrations

over the average for the county amounted to 165 bushels. This clearly demonstrates that increased yields can be secured at a profit when proper methods for handling this crop are adopted. Great credit is due Mr. Radebaugh for carrying out this most unusual and successful demonstration.

Landscape Gardening—There is a rapidly awakening interest in all subjects pertaining to landscape gardening. The demand for information and assistance has ranged from requests for cultural data, directions for controlling insects and diseases, methods of establishing and maintaining lawns, advice as to choice of and simple arrangements of plant material, to more or less elaborate designs for demonstration planting of suburban and farm home grounds, school grounds and the grounds of other public institutions, flower gardens, farm gateways and memorial plantings. County agents and home demonstration agents both co-operate with the specialist in these demonstrations.

DAIRY HUSBANDRY

Mr. J. A. Conover, specialist in dairy husbandry, reports a growing interest in the dairy industry of the State. The work has been carried on under the following heads: 1. Pure-bred Sire Campaign; 2. Cow-testing Association Work; 3. Creamery and Milk Plant Work; 4. Boys' Club Work; 5. Miscellaneous Demonstrations.

Pure Bred Sire Campaign—Personal assistance has been rendered by the specialist in the placing of thirty-one pure-bred bulls in eleven counties. The United States Bureau of Animal Industry has placed a number of pure-bred calves on loan in different counties of the State. The specialist has made fifty-six farm visits in connection with this campaign and is now compiling a list of all pure-bred herd owners of the State. This is the most important phase of the dairy extension work to be prosecuted in the future.

Cow Testing Association—The specialist reports difficulty in promoting cow-testing association work. It has always been a problem to secure satisfactory testers on the present basis of employment. A careful study must be given to a reorganization of this work so as to insure its continuance upon a satisfactory basis.

Creamery and Milk Plant Work—The specialist has given considerable time to assisting in the establishment of a creamery and milk plant at Waldorf, Charles County. This plant will be of the utmost value in encouraging the dairy industry in this section.

MISCELLANEOUS DAIRY EXTENSION WORK

In addition to the work of the Extension Specialist, Mr. Conover, Prof. J. A. Gamble and his assistants of the Dairy Husbandry Department, serving as part-time specialists, have greatly assisted dairy extension activities. All forces of the Service have successfully attacked the problem of co-operative marketing of milk. The dairymen

organized into market groups serving Baltimore, Philadelphia and Washington, are beginning to understand the problems which underlie the successful co-operative marketing of dairy products.

The fact that producers and dealers in our three market groups now meet to discuss the milk situation from its several angles is a step in the right direction for all forces to better realize the importance of quality and the orderly marketing of milk and cream. Milk marketing surveys have been made and every effort put forth to furnish the dairy organizations with facts concerning the milk problems. Representatives of the Service are in close touch with these marketing agencies, for the purpose of giving assistance when difficult situations arise.

RURAL ORGANIZATION AND MARKETING

The Assistant Director, Dr. F. B. Bomberger, serves as specialist in charge of this project. August 1, 1922, we were able to co-operate with the College of Agriculture in the employment of Dr. S. H. De Vault, who serves as a part-time specialist in marketing.

The specialist reports that during the past year the work has been complicated by the movement to convert the existing system of county and community organizations into a Farm Bureau System. While there has been a Farm Bureau in Montgomery County for three years, it was not until August, 1922, that Washington County decided to put on a \$10 membership drive which was very successful. This was followed by similar drives in Frederick and Anne Arundel Counties. In September, 1922, the Council of the Agricultural Society endorsed the movement on a \$10 basis, the society having previously recommended a \$2 basis and an effort is being made to have all of the counties organize on this basis. In this movement for more efficient county and State organization, the Extension Service has co-operated in an educational and advisory capacity through specialists and agents. The matter of deciding upon the type and form of organization desired in any county has been left to the farmers of the county, but once the question has been decided, every legitimate aid has been extended by the Service in order to facilitate the reorganization.

Co-operative Marketing—Early in 1922, efforts were made to form a Western Maryland Fruit Exchange. Plans of organization were submitted, but due to a freeze in the spring the project was discontinued. During the past year two local Exchanges have been organized. Considerable assistance has been rendered by the specialist and county agent in Wicomico County in the marketing of truck crops. During 1922 the organization or Exchange in this county did a gross business of over \$300,000. The service has assisted the Maryland-Virginia Milk Producers' Association in its reorganization plans and in erecting a system for co-operative marketing of milk.

Much work has been done in aiding the marketing of small fruits and truck crops in various parts of the State.

Co-operative Buying and Selling By Farmers—Every effort has been made by the specialists and agents to promote co-operative action by farmers. In order to secure better feeder cattle, Farm Bureau members of Washington, Frederick and Montgomery Counties pooled their orders and employed a buyer to visit the western ranges to purchase the cattle direct. Thirty-three carloads of very good stock were purchased. The specialists advised with Mr. E. P. Cohill, who was instrumental in promoting this project.

Investigation of the Baltimore Markets—During the summer of 1922 Dr. De Vault was able to carry on an investigation covering the conditions prevailing on the Baltimore markets for perishable products. He has been successful in gathering valuable data which will serve as a basis for certain constructive recommendations now being formulated relative to the betterment of marketing conditions in this field.

Many important faults with the present system were discovered through these investigations. As a result, a conference was arranged between a committee composed of representatives of the Maryland Agricultural Society, the Merchants and Manufacturers' Association of Baltimore and the Extension Service for the consideration of these and other questions of interest to both rural and urban Maryland. The conference developed a marketing chart which depicted all phases of the market problems.

As revealed through this investigational work, there is great need for a State-supported agency charged with the responsibility of helping solve the marketing problems enumerated. The funds available at present do not permit the employment of a full-time marketing specialist to carry on the work of making necessary marketing investigations, disseminating market information, concerning supply and demand, prices, etc., the enforcement of standard grades and containers for farm products, inspection of car-lot shipments at point of origin and at destination; inspection and supervision of accounts of commission merchants and perhaps the bonding and licensing of dealers in farm products. Many other problems incident to the foregoing are demanding attention. It cannot, therefore, be too strongly urged that funds be provided from some source to enable the State, preferably through an agency associated with the Extension Service, to undertake this most important and urgent work.

POULTRY EXTENSION WORK

Mr. W. H. Rice was appointed poultry specialist, effective October 23, 1922. Mr. Rickey, the former specialist, resigned in January, 1922, but due to lack of funds last spring we were unable to appoint a successor until July 1st. Delay was then occasioned in securing the

right man. As a result, very little was done in poultry extension, except to carry on the work in progress. Mr. Waite, specialist of the Experiment Station, rendered able service in meeting emergency demands.

Mr. Rice reports spending the greater part of his time thus far in visiting the county agents and home demonstration agents, for the purpose of studying conditions on which to base a plan of work during 1923. There has been an unusual interest developed in poultry in Maryland and it will be our purpose to push this industry as much as possible on account of its great possibilities in Maryland.

ENTOMOLOGY

Mr. E. N. Cory, State Entomologist, serves as part-time specialist in this subject for the Service. Mr. W. C. Travers, formerly assistant in demonstration work and inspection, died in January, 1922. Mr. Travers rendered an unusual service to the State and institution for twenty years. Owing to the death of Mr. Travers, a reorganization of the extension work was made whereby all of the orchard projects were transferred to the leadership of the specialist in horticulture, Mr. Shaw, under the terms of a general project whereby the pathologist and entomologist would help to plan the method of procedure in each orchard demonstration after a personal visit, in company with the county agent and horticulturist. Details of these projects and results obtained are reported under the project of horticulture. Mr. Cory reports that the plan has worked admirably and will be followed in the future.

Beekeeping—The beekeeping project had in view an increase in the number of beekeepers, instructing them in better methods, the organization of the industry, co-operative efforts in buying and selling and the dissemination of information.

Control of Pea Aphis—The pea aphis threatened such serious injury to peas in Anne Arundel County and the Eastern Shore that plans were made to conduct demonstrations for the control of the pest. The work showed that the aphis could be controlled on peas sown in the row by using 5 per cent nicotine dust at a cost of \$8.50 per acre for two applications. An increase of over 300 per cent in the number of pods was obtained on dusted fields as compared with the checks. Many fields of peas that were not dusted were destroyed entirely by the insect.

Miscellaneous Orchard and Other Work—Demonstrations were conducted in the use of paradichlorobenzene for the control of the peach tree borer, the European red mite and the black peach aphis. Forty-one thousand trees, mostly five years old, or older, were treated in one county with paradichlorobenzene under the directions of the specialist. Complete success attended this application for the control of

the peach tree borer. The European red mite was controlled by spraying with scalecide. The use of calcium caseinate was demonstrated in fifteen orchards. The addition of this material to apple sprays showed excellent results in spreading the spray and seems to be an economical orchard practice.

PLANT PATHOLOGY

Dr. R. A. Jehle, serves as full-time specialist in this project. Mr. C. E. Temple, State Pathologist, devotes a limited time to Extension Work. The county and home demonstration agents aided in carrying on the demonstrations in the field. Dr. Jehle reports conducting five demonstrations for the control of cantaloupe blight in Caroline County, six in Dorchester County and one in Wicomico County. The results from the dusting demonstrations varied with the method and number of applications. The cantaloupe crop is an important one on the Eastern Shore and it is gratifying to report good progress being made in the improvement of the quality and yield due to better methods of culture.

Control of Corn Root Rot—The specialist has devoted more time to demonstrations with corn than any other crop. The corn root rot is annually causing severe losses to the growers of sweet and field corn in Maryland. The estimated loss from this disease in Maryland during the year 1921 was 10 per cent, or approximately 2,515,500 bushels, valued at more than one million dollars. This work will be continued as it is one of the most important pathological problems in the State measured in terms of value to the growers.

Control of Irish Potato Diseases—Eight demonstrations for the control of potato scab with the use of inoculated sulphur were conducted in Somerset County and seventeen in Worcester County in 1922. Two demonstrations for the control of late blight by spraying with Bordeaux mixture and dusting with Saunders dust were conducted in Garrett County. The specialist reports that potato growers who used Western Maryland certified seed potatoes found them superior to the Maine uncertified and some Maine certified seed.

More than 6,000 bushels of Western Maryland seed potatoes were inspected and certified by the department. A number of fields of late potatoes, mostly McCormick, were inspected in Somerset, Howard and Baltimore Counties. In most of the McCormick fields from 10 per cent to 25 per cent of the plants were found to be severely infected with the Mosaic disease. This presents a problem that must be attacked in the State.

AGRICULTURAL ENGINEERING

Mr. Ray W. Carpenter serves as a part-time specialist in farm engineering work. He reports that the principal demand has been

for drainage work. Unfavorable financial conditions on the farm have limited the work in rural architecture and home conveniences very materially. Excessive freight charges on tile have reduced the number of drainage projects. During 1922 the specialist reports originating nine demonstrations in drainage and three in rural architecture. All completed work has met with excellent success.

GENERAL EDUCATIONAL EXTENSION

Prof. C. S. Richardson, in charge of this project, reports that during the past twelve months the work embracing four branches, lectures, motion pictures, correspondence courses and high-school public discussion league, has continued to progress along the usual lines.

Lectures—This department furnishes lectures when the character of requests does not place them under the jurisdiction of any of the agricultural specialists. Twenty-five public addresses, with an attendance of 8,000, have been delivered by the specialist.

Motion Pictures—A limited number of motion picture films are held for distribution to rural community centers throughout the State and orders or requests for films are submitted to the United States Department of Agriculture. The distribution of pictures among rural people has been of great educational value and it is regretted that limited funds have prevented securing a suitable supply of films.

Correspondence Courses—The specialist reports that owing to the lack of facilities for conducting the correspondence work, only a limited amount of activity in this phase has been undertaken. The following courses have been offered: English, Fertilizers, Farm Poultry, Beekeeping, Farm Machinery, Farm Dwelling Construction, Dairy Farming and Vegetable Gardening.

High School Public Discussion League—This work was organized three years ago and from a small beginning it has developed into a dignified and valuable institution. It now enjoys the hearty support and co-operation of the State Department of Education and is considered by the State Superintendent of Education as a most valuable adjunct to his high-school work.

SOUTHERN MARYLAND IMMIGRATION COMMISSION

The authorization for the Southern Maryland Immigration Commission by the last legislature provided funds for promoting land opportunities in this splendid section of our State. The Extension Service has given every possible assistance to the commission in inaugurating and developing this work. With the headquarters of the commission at the University, the close association of the Executive Secretary with our specialists and agents enables the commission to utilize the information and facilities of the Service. The Extension

Service continues to receive many letters of inquiry regarding available farming opportunities in Maryland. Every facility is afforded prospective immigrants to locate in the State.

MISCELLANEOUS WORK

In addition to the regular project work outlined, there is a great amount of general extension work conducted by specialists of the College of Agriculture and Experiment Station who help our forces in emergencies. A splendid spirit of co-operation exists between all departments of the institution. Among those who have assisted in extension work are: Prof. J. E. Metzger, Agronomy; Dr. A. G. McCall, Soils; Dr. De Voe Meade, Animal Industry; Dr. E. N. Pickens, Bacteriology; Dean P. W. Zimmerman and Prof. W. T. L. Taliaferro, Farm Management. The Service acknowledges its appreciation of co-operation which these men have given in meeting the calls made upon them.

FAIRS

The Service has made exhibits at various agricultural fairs over the State. We have been seriously handicapped for funds to make suitable exhibits. The budget for 1923 provides a small allotment for this purpose, but full advantage should be taken of the opportunity for education and dissemination of information at State and county fairs. We should have a department of exhibits with men in charge whose sole business would be to prepare and make attractive and educational exhibits at fairs.

STATE HORTICULTURAL DEPARTMENT

The State Horticultural Department, operating under the Extension Service administration, was created by an act of the Legislature of 1898 for the purpose of aiding the fruit growers and farmers of the State in the control of insect pests and plant diseases affecting all kinds of crops. Only by effective organization, investigation, regulation and demonstration can the annual loss from old and new pests be reduced to the minimum. The department has rendered valuable assistance to the fruit growers, and farmers of the State during these many years in the control of San Jose scale, brown rot on peaches and many other pests that exact a heavy toll. The department has been seriously handicapped for funds to meet the needs of the people. The appropriation has not been increased but the fruit industry has greatly developed and many new pests and diseases have developed and are causing serious losses.

The work of the past two years has been conducted as heretofore. Prof. E. N. Cory, State Entomologist, has directed the entomological work, while Prof. C. E. Temple, State Pathologist, and Dr. R. A.

Jehle, Associate, have carried on the pathological work. The department has lost a valuable worker in Mr. W. C. Travers, who served as inspector and who died in January, 1922.

The Entomologist reports fifteen nurseries inspected during 1922. The nurseries as a whole were found to be in good condition and the nurserymen earnestly co-operating to prevent the spread of injurious pests. Imported nursery stock has been inspected and a large amount of work done by the entomologists and pathologists in the inspection of orchards and assistance rendered the county agents and growers for the control of insects and diseases. Only the briefest summary of the work conducted can be given in this report.

The potato wart disease that threatened trouble in Western Maryland has been carefully watched and found to be not spreading. Immune varieties of potatoes can be grown in infected areas. Inspection of potatoes in Western Maryland for certified seed has been continued. Other diseases such as apple scab, corn root rot, tomato blight and Mosaic, pea root rot, sweet potato rot and many others are demanding the study of the pathologists.

In the entomological field several pests are threatening serious damage. The Japanese beetle which has done incalculable damage in New Jersey has advanced to our border but has not as yet been found in Maryland. We should be prepared to meet this pest which is so difficult to control and serious in the damage it causes.

The fruit growers want not only advice but personal visits and inspections from time to time to guard them against losses from various insects and diseases. All in all the department is seriously undermanned and needs additional funds for inspection and control work that will enable it to meet the urgent requests made upon it. It is earnestly hoped that we may be placed in position to meet the demands of the people for aid in control of injurious insects and disease that are costing the industry serious losses.

ESTIMATES FOR TRI-ENNIUM

Estimates have been submitted for the triennium. These have been reduced to the minimum consistent with the demands of the people and needs in the various activities of the Service.

An increase has been requested for the home demonstration work. The women of the State are demanding the same assistance through women agents and specialists as is now available to the men.

We are also requesting an increase in General Extension funds to provide more adequately for General Extension education in the form of lectures, films, correspondence and other work that cannot be done under Government funds.

Provision has been made and requested to meet the needs of the fruit growers through the Horticultural Fund. No increase in this fund has been made since it was established in 1898. Many insect

and disease pests are causing severe losses in the State. Moreover, we are threatened with several outside pests. The fruit growers are demanding more aid than we can possibly give under existing conditions.

There is an outstanding demand for aid in co-operative and general marketing of farm crops. For the past four years this Service has requested a special appropriation for this work. It is hoped that with the universal demand for assistance in marketing, we shall be placed in position to meet at least in part this most important phase of the farmers' business. The canning industry representing an investment of over \$40,000,000 desires special work for the culture and control of insects and diseases affecting canning crops. This is a most important industry in the State and should be aided by the appropriation asked for.

There is a constantly growing demand for educational exhibits at our county and State-wide fairs. We should be in position to make suitable exhibits at these fairs. A special appropriation is requested to make a beginning towards erecting permanent exhibits for general use by the State. It is hoped that conditions will permit granting of the appropriations requested to meet the growing needs of the Extension Service work in the State.

CONCLUSION

A full report of the Extension Service activities is given in the annual report to the Governor and to the United States Department of Agriculture. Only a summary of the various lines of work could be presented in this report. Many of the county agents' reports are models in presenting in a comprehensive manner the progress made in the respective counties during the twelve-month period.

We have a splendid force of men and women in the Service who are devoting their utmost energy and skill to render service to their constituents. In fact in several instances some of our members are seriously neglecting their personal well-being to meet the demands of their people.

The general conditions for Extension work in the State are favorable and the outlook is good. The farmers and home makers of the State have given every encouragement and co-operation in prosecuting the work. During the past six months extensive drives for organization of farm bureaus have been conducted in several counties with success. These more-effective county organizations should afford additional opportunity for carrying forward Extension programs more efficiently in the future. They will also encourage better business methods to be practiced in the selling of farm products. This increased interest in co-operation among farmers will undoubtedly react to the advantage of all concerned. No State offers greater opportunities for the development of its agricultural resources than Mary-

land and it will be the aim of the Service in the future as in the past to render all possible service in developing the State's agricultural potentialities.

The director and members of the Extension staff are deeply appreciative of the interest and cordial support given to our every undertaking by President A. F. Woods. We are also indebted to Dr. A. C. True and Dr. C. B. Smith of the United States Department of Agriculture for their encouragement and support.

Respectfully submitted,

THOMAS B. SYMONS, *Director.*

The Agricultural Experiment Station

*To the President of the University of Maryland,
College Park, Md.*

Sir: The Experiment Station Department of the University has completed thirty-five years of service to the State, and during this period the State has invested in reasearch, for the purpose of developing its greatest resources (agriculture), a grand total of \$467,724, which amounts to an expenditure of about 26 cents per farm per year, or \$9.10 per farm in thirty-five years. This almost insignificant amount has been derived from the indirect taxes and has not been an increase on the individual tax bill. During this same period the Federal appropriations for agricultural investigations has amounted to a total of \$775,000, or an equivalent of about forty-four cents per farm per year. Making a total expenditure in Maryland for solving the farmers' problems of about seventy cents per farm per year. Surely this is not an extravagant sum or heavy tax on anyone, but, be it ever so small, the public is interested to know if it was justifiable and what returns were gotten from its expenditure. It is a regrettable fact that there still exists among many farmers a lack of knowledge as to the activities of the Experiment Station and the very notable results that have been obtained by research which, if applied would be of immeasurable value to them.

It may not be out of place in this connection to remind our readers that the management of the farms of Maryland have in most instances changed in the past thirty-five years and that the persons in charge today represent a different generation from those at the helm when Experiment Stations came into existence. Each twenty-five years brings almost a complete turn over of the persons operating the farms. This condition causes many people to follow practices and enjoy benefits which they consider as having always existed and of which they do not know or give credit to the sources. This attitude of the public is particularly true as to farm practices as the adoption of modern methods is usually brought about more largely through imitating a neighbor rather than by getting information directly from the originator.

A Few of the Outstanding Financial and Other Returns Resulting from Agricultural Research

CROPS AND CROPPING

New Crops.

The Maryland Experiment Station is responsible for the introduction and determining the varieties and conditions to be provided for growing successfully the following crops: Crimson clover, alsike clover, alfalfa, soybeans, winter vetch and sudan grass. Practically every farm in the State is benefitting from the growing of one or more of these crops.

In 1923 the farmer who grew alfalfa has hay and the one who did not has very little hay and that of poor quality.

The 1923 crop of alfalfa is conservatively estimated as worth two millions of dollars. There were 40,000 acres of soybeans grown in Maryland in 1923. These contributed at least one million dollars' worth of feed for the livestock. These two crops alone in 1923 have paid over twice the cost of the Experiment Station for thirty-five years.

Hay Crops.

The average yield of hay in Maryland has increased as a result of the seed mixtures, methods and time of seeding, culture and fertilization determined by the Experiment Station. The value of the improvement in the hay crop is in the neighborhood of one million dollars annually.

Tobacco.

The Maryland Mammoth tobacco originated by the Experiment Station produces the highest yields and sells for the best prices of any raised in the State. A Charles County farmer wrote as follows regarding this variety: "It is in my opinion one of the best, if not the best, tobacco planted in this State; curing well, and of a fine silky texture and producing nearly double the amount to the acre. I sold from one-half acre last year \$389."

Wheat.

There has been tested during the thirty-five years 160 varieties of wheat. The best varieties that have been developed yield over twenty per cent higher than the best varieties of thirty-five years ago. A survey of the wheat fields of the State indicate that about seventy per cent of the acreage is planted to the higher yielding strains introduced by the Experiment Station. On this basis the Station work has added about one and a half million bushels of wheat to the annual yield.

Corn.

When the Experiment Station took up its intensive work with corn twenty-five years ago there was not a well-established or named variety of corn grown in the State. Now nearly every grower has a definite variety. There has been developed through the Station's work and direction strains of the Johnson County White, Boon County White, Reid's Yellow Dent and Funk's Yellow Dent which are adapted to Maryland conditions and which are producing better yields and better quality than were procured formerly. The improvement in varieties cultural methods and seed selection has during this period advanced the average yield in the State six bushels per acre, making a total of over three and one-half millions of bushels annually.

CANNING CROPS

The canning of food products is one of the important industries of Maryland. It is highly essential that every factor be given attention which will contribute to the quality of the product if satisfactory returns are to be obtained by both producer and packer. The Station work has made outstanding contributions to this field.

Tomato investigations have shown the need of earlier and stronger plants as of prime importance in procuring satisfactory yields. The development of disease resistant strains of the canning varieties has been of immeasurable value in contributing to both yield and quality. Results of investigations in spraying and fertilization has given growers much valuable help.

The Station's investigations have pointed out the factors which influence the quality of sweet corn for canning and devised a practical means for determining the proper stage and duration of the period when corn is of the proper quality for packing. This information should be of immeasurable value in raising the standard of Maryland, canned corn, and help in the realization of the slogan of "Maryland Canned Products for Maryland Consumers." The investigations on the control of insects detrimental to peas is doing much for the growers and packers of this product and will help the State to maintain its place and reputation for canned peas.

SOIL AND FERTILIZERS

The Maryland Station was the first to inaugurate and the first to complete a survey and mapping of the agricultural soils of its State. Through the soil survey every farmer is able to determine the character and type of soil on his farm and this information coupled with the knowledge gained through the chemical and physical analyses and the fertilizer and crop tests on the various kinds of soils he is able to intelligently follow a system of cropping and fertilization suited to his particular conditions with much satisfaction and profit.

There is in progress at present fertilizer and crop rotation studies at seventeen different points in the State. This work is being conducted on the predominating soil types.

Tests which have been in progress for five years on a worn Leonardtown loam soil in Southern Maryland have demonstrated the need of lime as the first step in soil improvement. Every ton of lime used produced increases in crop worth \$22.86. Stable manure produce outstanding results and showed it to be worth \$10.60 per ton in terms of the increased crop. However, when manure cannot be obtained a use of legumes as a green manure with lime and a liberal use of commercial fertilizer will produce very satisfactory results. Under many conditions the use of green manure crops and commercial fertilizers is the most economical and practical means for raising the productive capacity of soils.

The lime studies show a very general need of lime. About seven out of ten acres require lime in order to get the best yields, but there are conditions where lime caused a lowering of the yield and under such circumstances it should be used with caution.

The value of crops in Maryland in 1922 was sixty-four millions. If the knowledge of soils and quality and the use of fertilizers gained as a result of the Station's investigations enabled the farmers to save only two per cent on the cost of production it would have amounted to one and one-quarter millions of dollars.

MARKET GARDEN CROPS

Much attention has been given to all phases of work related to the production of market garden crops. Irish potatoes are the most important vegetable crop. They represent about one-fourth the total area and over one-third of the total value of all vegetables. The Station's work on the relation of the size of the seed piece to the yield has had a wide application and has given valuable returns. The control of diseases and insects on vegetable crops yields large annual returns. The results with the relation of seed to quality of celery is an outstanding piece of valuable work. Fertilizer studies with Irish potatoes, cabbage, sweet potatoes, spinach, tomatoes, asparagus have great value.

The area devoted to Market Garden Crops in Maryland is constantly increasing and the value of the results secured will grow each year.

THE FRUIT INDUSTRY

The investigations made on varieties, cultural methods, pollenization, fertilization, pruning, thinning, spraying for insects and diseases have all contributed towards making possible the development of large areas to growing fruit. Many mountain lands that a few years ago had little value are now producing some of the finest fruit found

in our Eastern markets and in the export trade. The development of fruit growing has greatly increased the revenues of the State and given profitable employment to many people.

The work which the Station has done in studying varieties with all classes of small fruits has yielded results which have had a wide application and exerted a marked influence in the amount and quality of product grown both for home and market. The results of fertilizer tests with strawberries and of pruning and training of the grape are sure to be regarded with increasing interest in future years as people fully appreciate their opportunities with these crops.

The work which has been done with rejuvenating an old peach orchard and comparing various claims and methods has given very decided results which will prove of great value and enable the orchardist to proceed in such cases intelligently and with much certainty as to the outcome.

ANIMAL HUSBANDRY

The Station funds and facilities have circumscribed the character and extent of its research with livestock but the contributions made to our knowledge in the proper housing of poultry, cows and hogs have been valuable. Much has been done in solving the various feeding problems with the result that those who are applying the information gained are procuring better and more economical returns for feed consumed and labor expended. The Station has contributed much knowledge on the digestibility of feeds with cattle and horses. The investigations on the use of corn as silage and prepared in various ways for feeding has had a marked influence in the greater appreciation and utilization of this most valuable crop.

The results obtained from the study of the causes of mottled butter, the significance of Leucocytes in milk, whipped cream and washing powders are outstanding contributions to dairy science which are of much value.

The study on the relation of earth worms to gapes in chickens gives definite information and settle for all time a much disputed question. The following investigations have made outstanding contributions to Animal Husbandry.

Dehorning Cattle, Leucoencephalitis in Horses, The Value of Molasses as a Stock Food, Hog Cholera, Cow Testing Association, Tape Worm of Fowls, Inexpensive Aids in Producing Sanitary Milk, Method for Determining the Laying Hens, Poultry Notes and Appliances, Caponizing and the Effect of Age on the Hatching of Eggs.

Sixty-five out of the 254 bulletins issued by this Station have been on Animal Husbandry subjects. Thirty-two of the sixty-five have dealt directly with dairying.

INSECTS AND PLANT DISEASES

The entomologists and botanists of the Station have always been very active in devising means for the control of insect pests and diseases of fruits, vegetables and general crops. The applications made of these results have not only saved many hundreds of thousand dollars annually, but have made it practicable to grow fruits and crops in Maryland that it would have been impossible to grow without these protective measures. The work of the entomologists on the mosquito and house fly control are of exceptional merit and should contribute much to the comfort and health of man and beast.

The work of the botanist on Maryland Weeds and the Quality of Seeds are worthy of note as the former is used as a text in many schools and the latter served as the basis for the Seed Inspection Law.

PLANT PHYSIOLOGY

This department of the Station is giving much attention to matters influencing the ripening, storage and conservation of fruits, vegetables and grains. The results already obtained have enabled many people to adopt better methods of storage with much satisfaction and profit. Many of the factors necessary to provide in storage houses can now be determined with a certainty and need no longer to be a matter of guessing. Many of the projects in connection with the growth of plants now under way in the soil, agronomy and horticultural departments are dependent upon chemical and physiological changes for their solution.

FENCE POSTS

Tests were inaugurated thirty-five years ago on a comparison of different woods and methods of treating fence posts to increase their durability. The scope of this piece of work was enlarged twelve years ago. The results obtained from this study are the most complete on record for this section of the country and should increase in value each year.

SEED INSPECTION

Since the passage of the law requiring a guarantee of quality for all farm seeds sold in the State there has been a decided improvement of all seed exposed for sale and the grades of very low quality with high content of weeds have almost disappeared from our markets. Farmers are appreciating this service rendered by the inspection laboratory and send many samples in for test both before and after buying.

The work of Seed inspection has saved the farmers much by preventing the purchase of worthless seeds. Many who are not availing

of this service are wasting money and losing much by crop failures by purchasing inferior seed. Last year the inspection showed that about 50 per cent of the samples had a seeding value equal to the guarantee; ten per cent were better than claimed to be; and forty per cent were inferior to what they were represented.

ANIMAL DISEASES

Much work has been done in the biological and pathological laboratories with miscellaneous diseases of domestic animals. There were examined during the year in the laboratory 748 specimen. In addition to this the field work necessitated visiting 117 farms, traveling 4100 miles and making observations on 10,000 animals, including poultry.

The major project under investigation is a continuation of the study of factors in connection with the control of hog cholera. It will require several years to complete this investigation.

A new investigation has been started on a study of the curative properties of ozone and ozonized oils. There has been a special laboratory equipped for this work.

The equipment for the animal disease work has been greatly improved and enlarged through the purchase of 12 acres of land east of the B. & O. R. R. and near the College Park depot. This, with the buildings already on the place and some additions which have been made, gives this department a chance to expand its work in a convenient, yet isolated, location.

STATION PUBLICATION

The following bulletins were issued during the fiscal year 1922-23:

These bulletins show the work completed and the contributions which the Station has made to farm information during the year.

	No.	Subject	Author	No. Pages
1922	July	Thirty-fifth Annual Report.....	H. J. Patterson	16
1923	251	Fertilizer Variety and Seed Selection Experiments on Irish and Sweet Potatoes.....	Thos. H. White	23
1923	252	Experiments on the Control of the Woolly Aphis.....	Ernest N. Cory	36
1923	253	Sweet Clover for Summer Pasture and Green Manure.....	J. E. Metzger	46
1923	254	Forecasting the Date and Duration of the Best Canning State for Sweet Corn.....	Charles O. Appleman	56
1923	255	Moisture Relations of Peach Buds During Winter and Spring	Earl S. Johnston	86

The publications have been mailed out to the farmers on the mailing list.

In addition to the bulletins issued the members of the Station staff have contributed numerous articles to the agricultural press and many technical papers to scientific journals and at scientific meetings.

INVESTIGATIONS IN PROGRESS

Details as to the character of the investigations receiving attention have been made in the Station's annual reports. The following is a summary of the work by departments and the number of projects which each worked upon during the past year:

	Projects
Soils and Fertilizers.....	22
Crops and Cropping.....	8
Botany and Plant Diseases.....	10
Entomology	12
Plant Physiology.....	8
Animal Husbandry.....	4
Animal Diseases	3
Dairy Husbandry	5
Poultry Husbandry	4
Pomology	15
Vegetable Gardening	28
Floriculture	6
Total.....	125

REQUIREMENTS

The demand for research work and investigations to solve the many problems which the farmer meets is constantly increasing. This means that this institution must have much greater facilities and more for maintenance if it is to render the real service which is expected.

The encroachments made by the construction of new building and enlarging the campus has reduced the amount of land available for cultivation on the Station farm to less than 100 acres. Much of this remaining land has been used in so many ways and for such a variety of tests that it is no longer suitable for investigations. The need of more land is very pressing.

The policy of conducting work in different parts of the State so as to meet local soil, climate and other conditions necessitates an increase in amount available for travelling expenses. This class of work should be extended as it is serving a good purpose and proving satisfactory to both investigators and farmers.

The Station greatly needs more funds for printing and distributing the results of its work not only in detail but in a number of popular forms.

The providing of the new buildings as outlined in the University program will add many of the facilities needed by some of the departments.

Agricultural research must be considered as an investment and enough has been presented to show that the returns pay a large dividend. Maryland's greatest natural and undeveloped resources is in her agriculture, and consequently much of her future greatness will depend upon its development through research, education and demonstration.

Respectfully submitted,

H. J. PATTERSON, *Director.*

Maryland State Board of Agriculture

Live Stock Sanitary Service

*Executive Officer,
State Board of Agriculture.*

Sir: The following report is submitted for your consideration. From reports we have received from our men in the field and from the private practitioners in the various sections of the State, we find there has been a remarkably healthy condition existing among the livestock in Maryland during the biennium ending September 30, 1923. The few cases of contagious or infectious disease reported have been handled promptly and at no time has there been real danger of a spread of the disease. Three outbreaks of anthrax have occurred, one in Baltimore County, one in Frederick County and one in Howard County, and in every instance the disease has been confined to the premises where it originated. The total losses in the three outbreaks being ten cows and five hogs. In the handling of these cases we were greatly assisted by the active co-operation of the State Department of Health and the Health Department of the City of Baltimore.

Tuberculosis Eradication and Hog Cholera control and eradication has progressed to the extent that our entire force has been taxed to the utmost in taking care of requests for assistance. A separate report covering the progress of the work conducted in Hog Cholera Eradication will be submitted by the inspector in charge of that branch of the work.

Tuberculosis Eradication is progressing satisfactorily, taking into consideration the limited force of inspectors and available funds for the payment of indemnities for tubercular animals slaughtered. The interest in this work extends to all sections of the State and we have on file more requests for the tuberculin test than we can handle for some months to come.

The following is a summary of the work done and money expended in Tuberculosis Eradication for the biennium ending September 30, 1923:

	Tested	Passed	Con- demned	Sus- picious
Cattle tested by State and Federal inspectors under the co-operative plan for the Eradication of Tuberculosis	91,350	83,672	7,678	
Cattle tested by State in-				

inspectors at Union Stock Yards, Baltimore	2,923	2,873	50	
Cattle tested by private prac- titioners as reported to the Board of Agriculture.....	13,333	12,674	607	52
	<u>107,606</u>	<u>99,219</u>	<u>8,335</u>	<u>52</u>

(The above summary of tests made includes retests.)

This tabulation shows 8.4 per cent of reactors were found on tests made by State and Federal inspectors; 4.5 per cent reactors in tests made by private practitioners, and 1.7 per cent reactors in the Stock Yard tests. The low percentage found on stock-yard tests is accounted for by the fact that 75 per cent of the animals subjected to the test in the yards come from comparatively clean areas in other States and bear tags showing they had been tested at some time previous to shipment.

We have paid out in indemnities during the biennium \$125,826.21 for 5,337 animals condemned and slaughtered under the co-operative plan, an expenditure by the State of about \$23.58 a head. The price per head paid for indemnity is below the average of the other States and the amount received from the sale of tubercular animals is above the average. This is accounted for principally by our system of disposing of reacting cattle which was put into effect by our Chief Veterinary Inspector who has charge of the sale of diseased animals. We now have in Maryland 684 accredited herds, representing herds having been found free from tuberculosis on two annual or three semi-annual tests. There are in these herds 12,344 cattle.

We have 2,604 herds, 22,595 cattle, that have been once tested and found free and the total number of herds under Federal and State supervision now total 5,031, representing 49,234 cattle. A complete study of the situation leads us to believe we can with an annual appropriation of \$200,000 for indemnities and a substantial increase in the amount allotted for operating expenses, test all the dairy cattle in the State within the next three years and by removing the tubercular animals from all herds we should at the expiration of that period have Maryland comparatively free from bovine tuberculosis. In asking for an increase in our appropriation for operating expenses, we have included expenses for Dairy Inspection. By the plan we have in mind we can conduct Dairy Inspection in connection with tuberculin testing and disinfection of premises and in that way materially reduce the expense and avoid the duplication of inspection to which the average farmer so strenuously objects.

The Biological Laboratory and Livestock Sanitary Laboratory located at College Park are partly supported from the appropriation for the Livestock Sanitary Service which makes available the services of the pathologists, chemists and veterinarians employed there. The close co-operation of these departments has enabled us to make in-

vestigations of animal diseases, conduct research work, and give prompt attention to reports sent in by farmers or local veterinarians. Hog Cholera Eradication being conducted from the College Park Station of the Livestock Sanitary Service makes available to that branch of the service all the laboratory facilities there.

The Extension Service, through its county agents working in co-operation with us in Hog Cholera and Tuberculosis Eradication work, makes it possible to conduct the work in an economical and efficient manner.

Under our present system the business management of the Livestock Sanitary Service is conducted through the Baltimore office by the Director, all matters pertaining to animal diseases being referred to the veterinarians and trained specialists employed by the University of Maryland and the State Board of Agriculture.

Respectfully submitted,

JAMES B. GEORGE, *Director.*

Reserve Officers' Training Corps

OPERATION OF MILITARY DEPARTMENT FOR TWO YEARS, ENDING OCTOBER 1, 1923

*To the President, University of Maryland,
College Park, Md.*

Sir: This report covers the operation of the Military Department for the two years ending October 1, 1923.

For the past two years the Reserve Officers' Training Corps Unit has shown marked improvement.

This unit in 1921 was awarded the honor of being named as one of the Distinguished Colleges of the United States, an honor awarded by the War Department to the twenty-five institutions showing marked excellence in their military training. When it is considered that the majority of the universities and colleges in this country maintain R. O. T. C. Units, the value of this award is apparent.

In 1922 this institution again gained this honor, so that it may be seen that the military training as offered at this institution is of a high grade and on a par with the other excellent departments here.

To date, thirty-four graduates have been commissioned as second lieutenants, Officers' Reserve Corps, and two as second lieutenants in the Regular Army.

The main function of the R. O. T. C. is the development of leaders, leaders who will succeed not only in time of war, but in every walk of life.

In the courses offered in the Military Department, this valuable feature is developed, for leadership consists in the development of the mind along analytical lines, the habits of obedience and discipline, development of character and a physically developed body.

In 1921 the personnel of the Military Department was increased by three captains, making a total personnel of six now on duty. The standing of the Military Department the past two years is due in great measure to the increase in personnel as it made for better instruction.

With the completion of the new armory-gymnasium, the question of rooms for classes and for care of equipment, etc., will do away with the crowding heretofore necessary.

It is recommended that the hours of instruction for the Military Department be made the basis around which the academic hours are arranged, for the reason that all students are required to take military—therefore, it is a logical arrangement.

The matter of securing houses in this vicinity for the personnel of the Military Department is a difficult one, necessitating living from two to ten miles from College Park. The ideal arrangement would be houses located on the College grounds.

However, on the whole, the co-operation and help offered here by faculty and students towards military training is considered to be superior to that at most institutions, and with such co-operation it is a pleasure for the personnel of the Military Department to give their best.

Very sincerely,

R. H. LEAVITT,

Lt. Col. Inf. (D. O. L.), P. M. S. & T.

Department of Health

*The President of the University,
College Park, Md.*

Sir: The functions of the Department of Health are to have general supervision over the health of the student body at College Park and conditions which may affect the same. Also, we treat in cases of sickness, and without cost to them, the help employed in the dining hall, laundry, green houses, Experimental Station, janitors and others doing general laboring work at the University.

The University maintains a small infirmary in charge of a nurse who lives in the building. There is a daily sick-call from 12 to 1 P. M., but students who are unable to attend classes or are indisposed receive attention at any time they apply. The infirmary has a maximum capacity of fifteen beds and we are in a position to take care of all ordinary diseases, such as colds, influenza, tonsillitis, minor injuries, etc. The more serious cases are removed to a regular hospital, unless the parents prefer to have the students at home. We do not assume any responsibility for students living off the campus, although it has been my practice to attend students living in the fraternity houses or boarding in homes having a direct connection with the University and without extra cost to them. The help in the various departments, however, are treated in their homes as a part of my regular duties.

At the beginning of the school year all new students, and older students who may apply, are given a physical examination. This is done under authority of the Military Department. Students found to have physical defects are told of the defects and advised. In some cases they are instructed to report at intervals so that their condition may be watched.

In the fall and spring students are offered the triple typhoid vaccine. All employees handling food or milk are required to take this vaccine once in three years. Also, the feces of these employees are examined once a year for typhoid.

During the past year, including the regular students, summer students and help, we have prescribed nearly five thousand times. While there is considerable minor medical and surgical work, we feel that by giving consideration to these conditions we are able to prevent more serious sickness.

The appropriation for this department has been adequate and will take care of the work for the present. However, we do need a new

infirmery. The present building was erected about 1901 and has been all that was necessary until the last few years. While there are a great many days in the fall and spring when there are no bed patients, yet during the winter months we frequently have all we can accommodate. Should there be an epidemic of some contagious disease, such as measles, diphtheria or scarlet fever, we would be in a quandry. The inadequateness of the present infirmery is due to two conditions—the rapid increase of the student enrollment and the introduction of co-education. As soon as practicable, we should have a new building. There are some ideas which I would like to present more in detail when the proper time arrives.

Both the nurse—Miss Ruby Crawford—and myself have tried to do our work conscientiously. Our relations with the other departments and with the student body have been very pleasant and we trust we have gotten satisfactory results with the limited facilities at our disposal.

Yours very truly,

W. ALLEN GRIFFITH, M. D.

REPORT OF

Forestry Department

COVERING PERIOD FROM JANUARY 1st, 1923,
TO SEPTEMBER 30th, 1923

Dr. A. F. Woods,

President, University of Maryland.

Sir: Under the Reorganization Act, the Maryland State Board of Forestry was abolished on January 1st, 1923, and the forestry work of the State transferred to the University of Maryland, under a State Department of Forestry, subject to the Board of Regents of the University, but under the guidance of an Advisory Board consisting of five members appointed by the Governor. This report, therefore, covers only nine months of the calendar year 1923, since the Forestry Board became a department of the University of Maryland.

Forestry work in the State began in 1906 when the first forest law was passed and has, from a very small beginning, gone steadily forward with meager appropriations, until it now occupies an important place in the conservation of one of our most important resources, the forests.

The forest area of the State is 2,228,000 acres, or approximately thirty-five per cent of the total land area. Of this area the State owns, in State forests, less than 4,000 acres, so that of necessity the main work of the department is in co-operating with woodland owners in bringing about better care, protection and management of the privately owned forests. Under wasteful cutting methods, when timber had little value because of its abundance, together with the ravages of forest fires which have reduced the productive capacity of the forests, to a small fraction of their former output, Maryland, today, is dependent upon outside sources for four-fifths of its lumber supply. Added to the high price paid for imported lumber, we are paying an annual freight bill, on this product, of approximately five million dollars, this, notwithstanding the fact that the woodlands of the State are sufficient in area and the quality of the soil good enough to produce the wood and timber we now use, or its value equivalent, if properly managed. There is no section of the country more favorably situated for timber growing than is Maryland. The Department of Forestry is centering its activities along lines that will bring about better forest management through the adoption of improved systems

of handling woodlands, better forest protection and putting idle lands to work growing timber, where no better use can be demonstrated.

There is no resource of the State that has been so badly abused as the forests and none that has greater promise of substantial returns under scientific management. The opportunity presented and the obligations imposed on the State Department of Forestry, in view of these conditions, are fully realized and all the resources at its command are being used to their limit to make forest lands productive.

ASSISTANCE TO WOODLAND OWNERS

Since practically all the forest land of the State is in private ownership, it is only by co-operation with these owners that it is possible to introduce the practice of Forestry. A system of co-operation has been built up, by which the Forestry Department sends its experts, at the request of individual owners, to examine their woodlands and make recommendations for the better handling of individual holdings. Not only is advice given on the ground, but practical assistance is given, where desired and the conditions warrant, in the actual marking and estimating of timber, the preparation of contracts and assistance in selling, each case serving as a practical demonstration in the community, of Forestry put into practice. Since this work was started, in 1908, examinations of individual tracts comprising nearly six per cent of the wooded area of the State, have been requested by woodland owners and better systems of forest management instituted. Between January 1st and September 30th, 1923, the period covered by this report, thirty-five tracts of woodland in fifteen different counties have been examined and plans of management prepared, covering 3,210 acres.

There are approximately 350,000 acres of waste land in the State, land that is not now growing any crop of value. All of it is capable of growing timber and much of this area should be planted in forest trees to secure its highest productive use. To this end assistance is given by this department in the preparation of planting plans and furnishing trees at cost from the State nursery for forest planting. During the nine-month period three such plantings were made, under the supervision of the department, in three different counties. The areas comprised 28 acres upon which a total of 32,600 trees were planted.

FOREST PROTECTION

Under the forest laws of Maryland the Forestry Department is specifically charged with the extinguishment of forest fires and the development of a forest protection system.

When, under the Reorganization Bill, this department became an integral part of the University of Maryland on January 1st, 1923,

the department's organization in the discharge of its duties in protecting the forests was as follows:

General supervision of work by State Forester.

One Assistant Forester who gives three quarters of his time to the administration and direction of the forest protection work in the State.

Four District Wardens located respectively in Oakland, Cumberland, Frederick and La Plata, who work on a part-time basis, in supervising the work of the forest wardens investigating violations of the forest laws and carrying on general educational work.

Eight tower men who are paid on a monthly basis during the fall and spring to man the lookout stations erected and equipped for the detection of forest fires, three in Garrett, two in Allegany, one in Washington, one in Frederick and one in Anne Arundel County.

Two hundred and seventy-five forest wardens located throughout the State, whose duty it is to suppress forest fires whenever observed or when called to their attention.

On the organization devolves the responsibility of protecting the 2,228,000 acres of forest land in the State, and under existing appropriations this amounts to about one-half cent per acre per year. Under the most favorable weather conditions this amount proves adequate, but under the abnormally hazardous fire weather such as occurred in the spring of 1923, this amount is utterly inadequate to cope with the situation and there results a record such as is shown below.

SUMMARY OF FIRES, SPRING, 1923.

Number	Acres Burned	Damage	Cost to Extinguish
239	53,296	\$225,886.06	\$4,446.08

It is believed that at least two and one-half cents an acre per year is necessary to give anything like adequate protection to the forests of the State.

STATE FORESTS

The State forests, six in number, comprising about 3,900 acres, are located in three widely separated sections. They were acquired by the State partly by gift and partly by purchase. They serve three important uses, first as productive areas for the growing of timber and as demonstrations of applied forestry in the different sections; second, as recreation grounds for the people of the State, and third, as protection of the water sheds of important rivers.

Under careful management the State forests are being protected from fire, the timber growth is rapidly increasing so that these areas are not only of great value at the present time, but their value is increasing year by year.

In addition to the State-owned land the use of other wooded areas, adjacent to the State forests, is given to the State Department of Forestry under co-operative agreement with the owners, whereby the State protects the lands from fire and trespass, and in return uses them for camping and other recreational uses.

This is particularly true of the Patapsco State Forest where the State owns less than 1,000 acres of land, but has the use of about 1,500 acres of adjacent land under this co-operative agreement, making a total of about 2,500 acres. The forest itself lies in a region of great natural beauty and its proximity to Baltimore makes it ideal for summer camping. During the camping season of 1923 about 200 camping permits were granted, providing for about 2,000 campers and in addition there were several thousand people who visited the forests for a day at a time.

The Garrett County forests, four in number, comprising about 2,800 acres, are located just west of the Youghiogheny River and extending from Swallow Falls southward, about five miles. In addition to the State-owned land, the use of approximately 600 acres in the vicinity of Swallow Falls has been given to the State under a co-operative agreement similar to that obtaining on the Patapsco. These are timber forests, but, in addition, serve a useful purpose in affording attractive camping grounds and water shed protection. During the past season thirty-seven camp permits were granted and there were 1,675 registered visitors to the State forests.

The Fort Frederick Forest is the most recent acquisition, having been purchased in December, 1922. This tract of 191 acres contains old Fort Frederick built in 1756 and still in a good state of preservation. It is the best preserved of any of the frontier forts of the pre-revolutionary days. This forest, at the edge of the Allegany Mountains, and bordering on the Potomac River and Big Pool, promises to be one of the most attractive spots for the tourist and the camper when it is opened up for camping in the spring of 1924.

STATE FOREST NURSERY

The State Forest Nursery on the University grounds at College Park is devoted to the growing of trees for forest planting and for the planting along roadsides. These are distributed at the cost of growing them to residents and organizations in the State. It has been possible, within the past few years, to furnish some trees, without charge, to State institutions and to improvement associations for public planting. Since the nursery was established in 1915 there has been a steadily growing demand for trees. The demand has increased much faster than it has been possible to furnish the trees. The present capacity of the nursery is about 100,000 trees suitable for forest planting and about 2,000 larger sized trees suitable for road-side planting.

Applications received for trees, during the nine-month period, January 1st to September 30th, 1923, greatly exceeded the output of the nursery and it is confidently believed that the nursery could distribute five times as many trees as it is now able to grow. An enlargement of the nursery facilities is imperative to meet present needs.

SHADE TREE WORK

Legislation was enacted in 1914 for the protection and care of the shade trees growing along the public highways throughout the State and the administration of this work was placed with the Forestry Department. This gives the department jurisdiction over approximately two million trees along the streets and highways throughout the State, and under this law no trees growing within the right-of-way of a public highway or between the curb line and property line of any street in any incorporated town in the State may be cut or trimmed without a permit from the Forestry Department. The principal work done under this law is the supervision of the trimming of trees by the pole line companies to give clearance to telephone, telegraph and electric light wires. For this purpose a large number of tree wardens are employed to supervise the work. The cost of such supervision, however, is born entirely by the pole-line companies, there being no State appropriation to carry on this work.

In addition to the supervision of trimming by the pole-line companies, the department gives expert assistance to towns, organizations and individuals, in handling shade tree problems, such as preparation of planting plans, recommendations as to trimming and spraying of trees and work of a similar nature.

During the nine-month period—January 1st to September 30th, 1923—the department has furnished supervision for the trimming of approximately 20,000 trees and has examined and prepared report with recommendations upon the condition and proper care of the trees in one town having about 500 trees, in addition to giving advice in a large number of individual cases.

EDUCATIONAL WORK

Under the Reorganization Act the Department of Forestry is established under the University of Maryland and by act of the Board of Regents the State Forester is made Professor of Forestry. The course of lectures and field demonstrations in Forestry given at the University of Maryland for several years past was conducted in the spring term of 1923. This consisted of two lectures and three hours of field work each week during the term.

In addition, a large amount of educational work is done throughout the State. For this work the department has a moving-picture machine together with a special attachment for generating electric

current, three reels of moving pictures (one on loblolly pine having been taken in the State by the Department in co-operation with the United States Department of Agriculture) and about 400 lantern slides. Within the nine-month period covered by this report, twenty-four lectures on Forestry subjects have been given.

In addition to lectures, special articles are prepared for the local press, contributions to technical and popular magazines on Forestry are written and special displays prepared for county fairs and industrial exhibits in Baltimore.

The department now has on file 1,000 pictures illustrative of all phases of forestry and lumbering in the State; many of these are mounted in special sets and are available for nature study work in the public schools. In addition the department has a large amount of exhibit material in the form of wood specimens, tree seeds and wood industry exhibits.

By means of pamphlets and bulletins distributed to a mailing list of about a thousand selected names throughout the State, matters of general forestry interest are brought to the attention of the public. During the nine-month period—January to September, 1923—in addition to "Forest Trees of Maryland," referred to in a subsequent paragraph, a bulletin on the forest reserves of Western Maryland and a leaflet on the proper planting of shade trees were sent out.

FOREST INVESTIGATIONS

The Department of Forestry, in addition to functioning in an administrative capacity, as provided in the forest laws of Maryland, also carries on investigations, as to the growth and yield of the valuable timber species of the State, collects and compiles information in regard to the cost of manufacture of various forest products and correlates information in regard to forest taxation, looking to the passage of legislation favorable to the practice of Forestry.

Permanent sample plots both in pine and hardwood give valuable data on growth and yield, taper measurements on thousands of felled trees of all species give material for the construction of total volume tables and special field studies obtain the necessary information in regard to stumpage values for various forest products, and land values, as a basis for wise forest taxation.

From time to time, as records justify, the results of these investigations are published in bulletin or leaflet form for State-wide distribution. During the nine-month period closing September 30th, 1923, a thirty-page pamphlet, descriptive of the thirty most important trees of Maryland, has come from the press, and within the calendar year a treatise on loblolly pine will be available for distribution.

FINANCIAL STATEMENT

STATE DEPARTMENT OF FORESTRY

January 1, 1923—September 30, 1923

Balance January 1, 1923.....\$ 163.65

Receipts:

State Treasurer	26,698.56
Woodlot Work (travel)	368.26
Reimbursement, Fire Expenses	748.51
Nursery Stock (sale)	211.80
Other Sources	1,280.87

\$29,471.65

Interest F. & Nat'l Bank.....	37.00	\$29,508.65
-------------------------------	-------	-------------

Expenditures:

Salaries and Wages	\$17,603.56
Rent	900.00
Postage	270.73
Office Supplies	140.46
Printing	1,007.45
Office Expenses.....	115.65
Telegraph and Telephone	333.99
Office Equipment	274.05
Traveling Expenses	1,524.77
Freight and Express	68.65
Seeds and Trees	701.46
Maintenance of Automobiles.....	1,030.24
Field Equipment	1,487.82
Miscellaneous	4,022.20
Forest Reserve	4.25

\$29,485.28

Balance, 9/30/23	23.37
------------------------	-------

Respectfully submitted,

F. W. BESLEY, *State Forester.*

Maryland Geological Survey

The reorganization of State departments abolished the *ex officio* commission for the State Geological and Economic Survey and erected in its stead an Advisory Council and transferred the administrative functions to the Board of Regents of the University of Maryland on January 1, 1923. The direction of the activities of the Survey, to which were added those of the State Weather Survey, remains in the hands of the State Geologist, Professor Edward B. Mathews of the Johns Hopkins University, who has been connected with the Survey since its establishment in 1896.

The activities of the Survey originally comprised many fields which have since been transferred, as the work enlarged, to later bureaus, such as the State Roads Commission, the State Board of Forestry and the State Mining Engineer. At present it consists of: (A) The preparation and publication of maps—topographic, geological and agricultural soil—of the counties and topographic maps in large scale of cities and their environs; (B) the preparation and publication of reports in three series (1) *General Reports*, including discussions of special topics and specific mineral deposits, such as coal, clay, limestones and cement, building stones, etc.; (2) *Systematic Reports* or monographic studies of the various geological formations of the State, and (3) *County Reports* on the physical features of the individual counties; (C) the annual compilation, in co-operation with the United States Geological Survey, of the Statistics of the Mineral Industries; (D) the maintenance of a Bureau of Information regarding the physical features of the State.

Along these various lines the Survey, since January 1, 1923, has been engaged in a revision of the topographic maps of Baltimore and Allegany Counties which are now in process of publication; the preparation of new sheets, on the scale of one inch equals 1,000 feet, covering twenty square miles each about Frederick and Baltimore City; the Geological Survey of Harford, Baltimore and Carroll counties; a restudy of the coal fields of Garrett County, and the survey of agricultural soils in co-operation with the State Experiment Station and the United States Bureau of Soils of St. Mary's and Worcester Counties. During this period the Survey has published *agricultural soil maps* of Carroll, Charles and Harford counties; *Volume XI* of the General Reports which contains a second report on the coals and a report on the fire clays of Western Maryland; *Report on the Silurian*, the eighth volume of the systematic reports, giving the

results of an exhaustive study of the silurian deposits of Maryland which has been very favorably reviewed by scientific journals.

The appropriations for the year 1922-23 totaled \$19,439.54, of which \$17,701.92 were expended with a reversal of \$1,737.62 to the State Treasury. The requests submitted for the succeeding triennium involve practically no increases except for the purchase of a photostat.

Complete reports of the work of the Survey are published separately.

The Library

COLLEGE PARK

*To the President of the University,
College Park, Md.*

Sir: This report covers the biennial period—October 1, 1921, to October 1, 1923.

Our staff consists of Librarian, Assistant Librarian and four part-time student assistants, one of whom has entire charge of the library in the evening and on Sunday. Mrs. McVey, formerly Miss Miltanna Rowe, who was Librarian here for five years, was married last year and resigned her position on August 1, 1923. Miss Kate White, Assistant Librarian, was in charge until September 1, 1923, when the present Librarian took up her duties.

The library is open from 8.30 A. M. to 5.30 P. M. and from 6 to 10 P. M. Monday to Friday, inclusive; 8.30 A. M. to 12.30 noon on Saturday; 2.30 to 5.30 P. M. and 6 to 10 P. M. on Sunday.

As one of the main objectives of the past five years—the refurnishing of the library—had been largely accomplished, comparatively little was spent for this purpose during the last two years. A few needed improvements have added much to the comfort and appearance of the building.

The recataloging of the library has progressed a little, not much of this work having been possible with the cataloging of a larger number of new books to be done and with the present small staff. Altogether 3,500 books have been accessioned and cataloged during the biennium.

Greatly increased use of the library books is shown by the fact that the number of books drawn out for home reading is about two and a half times as great during the last two years as during the two years preceding.

The statistics are as follows:

Books taken for home reading.....	9,619
Magazines taken for home reading.....	725

The enrollment of students in library science, taught by the Librarian, is more than twice what it was in 1921, as the following figures show: 1921, 68 students; 1923, 141 students. Four sections are taught once a week. This year a text-book is used in giving instruction in the use of the library.

Our library extension work continues to grow, although we do not push this work, owing to lack of books and more especially of suffi-

cient clerical assistance. During the last two-year period 252 books have been loaned throughout the State in answer to requests from individuals.

This library makes extensive use of the borrowing privilege granted to us by the Library of Congress and the Library of the United States Department of Agriculture. Occasionally loans are received from other libraries. In this way our resources are to some extent supplemented in the kind of material used by graduate students and faculty.

Following gifts to the library are herewith acknowledged:

From the Class of 1923, its bank balance of \$290.70, with which a set of the Encyclopedia Americana and three pictures were purchased.

From the Latin-American Club, through Senor Zevallos of New York City, Spanish books valued at \$100.

From the Maryland Historical Association, a set of the Maryland Archives.

From Mrs. Elmore Power of College Park, an oil painting.

From the Summer School of 1920, a chair purchased in 1921 for the reading-room.

The library has outgrown its present quarters, both as to shelving and floor space. Much valuable Government document material could be had for the asking and some that we have could be placed where it would be more accessible if there were room on the shelves. Any appreciable addition to shelves is barred because of lack of floor space and danger of causing the floor to collapse if more book cases are added.

Although as many books as possible are bought each year on our equipment fund, this library can never be brought to a satisfactory status except by a much larger allowance for books. We need many more important reference works, standard works and newer books for every course taught here and more good fiction. We also need to bind more periodicals than we can at present. The total number of books in the library, approximately 13,500, is very small for the library of an institution of the size and importance of our State University.

One of our greatest needs has been pointed out before, but it steadily grows greater and cannot be too much emphasized. This is the need for a cataloguer on our staff. There still remain some 8,000 of the older books, besides several thousand pamphlets and bulletins that should be catalogued. The work of cataloguing the new books as they come in can, only with great difficulty through lack of time and many interruptions, be done at present.

Another deficiency that should be remedied in the near future is in our charging system. Our books have never been equipped for a convenient charging system with card pockets and cards. This could be done in few months by several extra student assistants, whom at present we have no means to employ. With this work completed the students and faculty would be saved much of the time it now takes to write the necessary records when books are drawn out and the library would have more accurate and convenient records. If anything, still more pressing is the necessity for having someone constantly at the desk where books are to be charged. At present no record is kept of the use of books temporarily kept on special "Reserve" shelves for the use of classes during the day, with the result that some students carry away books needed within a short period of time by entire classes and keep them until the special need for them has passed. This very undesirable condition and also much laxity in the charging of ordinary books often resulting in their loss, can only be obviated by constant attention to this phase of the work, which cannot be given with the present amount of assistance. To explain this statement it need only be said that the presence of the Assistant Librarian is required during the day on the first floor of the building, where the agricultural reading-room is located, and the Librarian has to attend to all matters connected with the upper floor, including the charging of the books, except for a few hours each day when a student assists. Administrative matters at times requiring her absence from the building, the teaching of library science, reference work, correspondence, the selection and ordering of books and equipment, and the hurried cataloguing of books for which faculty and classes are waiting are some of the duties which prevent the Librarian from carrying out the details of a good charging system. A much better policy would be to place student assistants in charge of a loan desk for the entire day. For this we need a larger student assistance fund.

To sum up the library situation, there is an urgent need for larger rooms for present need and future growth, for a larger staff, for more books—in a word for more money.

Respectfully submitted,

GRACE BARNES, *Librarian.*

BALTIMORE SCHOOLS

*The President of the University,
College Park, Md.*

Sir: I beg to submit herewith some account of the activities of the Library of the University of Maryland in Baltimore for the two years ending September 30th, 1923.

During the University year the staff consists of the Librarian and two part-time assistants.

This library, founded in 1813, functioned for over a century as a gift library, supported almost entirely by donations. For the past five years, however, the need of carrying on the work by the purchase of books for the various departmental libraries has been keenly felt and at present every department is actively interested in the up-building of the library, which is consolidated, representing Medicine, Law, Dentistry, Pharmacy and Commerce. It is a reference library to a large extent, with discretionary power to lend certain books vested in the Librarian. There are no fees. There are 20,906 volumes in the library. The average daily attendance, all departments, is 350, ranging in groups of from twenty-five to eighty. The library has a seating capacity of 100. Approximately 100 text books and journals are circulated during the library day. Students also have access to certain open shelves where reports, encyclopedia, etc., are kept. No account of this circulation could be kept under present conditions, but the figures would run into the hundreds daily.

Much reference work is done for teachers and students of all departments, bibliographies prepared and others verified. The scientific writings of the alumni are also collected and arranged systematically as "Contributions to Medicine, Surgery, etc.," by the alumni of the University. The library is also the depository for the "over" copies of the official publications of the Department of Medicine, in which a great deal of work is done by gift and exchange.

In addition to the very valuable library, which includes many of the early books in medicine, our building contains items of historical value, bound thesis of the School of Medicine (1820-1886), autograph letters of celebrities, portraits and busts of members of the early faculties, ancient admission tickets to lectures, portraits and records of the Gold Star men of the University in the World War, etc., etc. What is needed by every department of the University in Baltimore is a modern fireproof library building in which to house these treasures, which, from the standpoint of replacement, are priceless.

During the past two years the accessions, attendance and the work of the library have grown very much and the need for expansions was so great that the building was remodeled last summer, with the addition of a gallery for study purposes and three conference rooms for examination work, practice court cases, etc. New furniture was purchased for the reading-room, and a small office with a charging desk for the Librarian was constructed.

Last year the catalogue of the text books of the Law School was completely revised with the Library of Congress printed cards. The catalogue of the scientific library (medicine and the allied sciences) is being revised from the old manuscripts cards to the modern method and approximately 3,000 books have been accessioned, catalogued and recatalogued. Extra help on the catalogue, to expedite its revision, is very much needed.

We are endeavoring to build up a University Library; building up from the historical works and embracing the modern. With new departments being added, and a steady increase in reference, and in research for teachers and students, we find serious deficiencies in our literature. Modern text books and journals are greatly in demand and I would like to call special attention to this need.

Respectfully submitted,

(Mrs.) RUTH LEE BRISCOE, *Librarian*.

Office of the Registrar

*The President of the University,
College Park, Md.*

Sir: The following statistics show the registration of students during the regular school years—1921-22, 1922-23, 1923-24 (as of November 1, 1923), and the Summer School sessions of 1921, 1922, 1923.

The figures in this report refer to the number of students attending the University since the last biennial report was published and are significant in themselves.

Total registration for the three years as indicated:

	1921-22	1922-23	1923-24*
College of Agriculture.....	231	298	242
College of Arts and Sciences.....	214	272	284
College of Commerce and Business Administration	240	382	520
School of Dentistry.....	204	258	486**
College of Education:			
College Park Classes	63	75	77
Extension Classes	34	121	208
College of Engineering	158	181	197
Graduate School	20	53	68
College of Home Economics.....	15	17	28
School of Law	490	563	552
School of Medicine	306	336	340
School of Nursing	69	89	90
School of Pharmacy	93	145	188
Summer School	380	446	452
Total	2517	3236	3732***

* As of November 1, 1923.

** Includes 187 students from Baltimore College of Dental Surgery, which institution was consolidated with the University of Maryland, School of Dentistry, June 15, 1923.

*** The new University of Maryland, as a state owned and controlled institution, was organized July 1, 1920. During 1919-20 the combined enrollment of the Maryland State College and the old University of Maryland was 1622. In four years the registration has increased 130.087 per cent.

Percentage of increase in registration of 1920-21 over 1919-20 13.009 per cent.

Percentage of increase in registration of 1921-22 over 1919-20
55.179 per cent.

Percentage of increase in registration of 1922-23 over 1919-20
99.507 per cent.

Percentage of increase in registration of 1923-24 over 1919-20
130.087 per cent.

Percentage of increase in registration of 1920-21 over 1919-20
13.009 per cent.

Percentage of increase in registration of 1921-22 over 1920-21
37.316 per cent.

Percentage of increase in registration of 1922-23 over 1921-22
28.566 per cent.

Percentage of increase in registration of 1923-24 over 1922-23
15.327 per cent.

Total Registration—College Park:

	1921-22	1922-23	1923-24
College of Agriculture	231	298	242
College of Arts and Sciences.....	214	272	284
College of Education:			
College Park Classes	63	75	77
Extension Classes		17	18
College of Engineering	158	181	197
Graduate Schools	20	53	68
College of Home Economics.....	15	17	28
Summer School	380	446	452
Total	1081	1359	1366*

Total Registration—Baltimore:

College of Commerce and Business			
Administration.....	240	382	520
School of Dentistry.....	204	258	486
College of Education.....	34	104	190
School of Law.....	490	563	552
School of Medicine.....	306	336	340
School of Nursing.....	69	89	90
School of Pharmacy.....	93	145	188
Total	1436	1877	2366*

* As of November 1, 1923.

The geographical distribution of students shows 67.899 per cent (or 2,534 students) of the total registration comes from Maryland.

As an evidence of the desire of the University of Maryland to have residents of the State of Maryland in the student body, a tabulation of the Maryland resident enrollment in the first-year class, school of medicine, is given for the past five years.

	Number of Students in Class	Number of Maryland Students in Class	Percentage of Maryland Residents in Class
1919-20.....	50	9	18.00
1920-21.....	79	17	21.519
1921-22.....	117	32	27.35
1922-23.....	110	44	40.00
1923-24.....	98	46	46.939

All applicants from Maryland are given preference over out-of-State prospects, except, of course, where a Marylander is lacking in the qualifications necessary for entrance. The requirements for admission are enforced strictly, yet fairly, and always in favor of the Marylander, unless the odds are against him, and it would be to our disadvantage to accept him.

It is gratifying to know that the graduates of the Baltimore City public secondary schools are registering in the University of Maryland in satisfactory numbers. Included in the enrollment of new students this year are 236 graduates of the city high schools. Baltimore City College has contributed 169 of this total. During 1922-23 the Baltimore City enrollment was 164. The gain for the current year, therefore, is 43.902 per cent.

Respectfully submitted,

W. M. HILLEGEIST, *Registrar*.

The Eastern Branch

(The Eastern Branch of the University of Maryland for the Training
of Negroes Is Located at Princess Anne, Somerset County.)

To Albert F. Woods, D. Sc.,
President of the University of Maryland,
College Park, Md.

Sir: I take pleasure in submitting to you and, through you, to the Board of Regents of the University of Maryland a brief report of the activities of the Eastern Branch of the University of Maryland.

SCOPE OF WORK

The work of the Eastern Branch is not yet of college grade though some of the work done would be classed as belonging to the lower years of college.

The Federal authorities desire to bring the Eastern Branch fully up to junior college grade and courses of study and practice have been adopted for this grade of instruction. At present there are not sufficient directors and teachers of advanced training on the staff to properly carry forward these courses. It is hoped that proper teachers and equipment will soon be provided to organize this work.

We present herewith a list of the teaching staff and the enrollment of students for 1922-1923:

John Oakley Spencer, Ph. D.....	President
Thomas H. Kiah, Ped. D.....	Principal—Ethics and Education
Daniel J. Pinkett, A. M.....	Mathematics and Physics
Lida L. Brown, A. B.....	English and Education
John Elliott Smith.....	Agriculture and Chemistry
Robert A. Grigsby, A. B.....	Vice Principal—English and Geography
Lewis B. Willis.....	Woodwork
McKinley D. Wright.....	Ironwork
Essie H. Bivens.....	Domestic Art
Laura V. Mullins.....	Domestic Science
D. Lyman Ridout.....	Music
Pauline L. Baskerville.....	Matron—English
Barton White	Horticulture and Botany
Virginia White	English—Nature Study

B. Franklin Waters.....	Printing
Charles E. Clark.....	Poultry and Animal Husbandry
Marie Clark	Secretary—Registrar
Louis F. Martin	County Demonstration Agent

Enrollment

	Men	Women	Total
	77	111	188
Agriculture	9		9
Horticulture	7		7
Poultrycraft	5		5
Blacksmithing	13		13
Carpentry	20		20
Printing	15		15
Cooking	6		6
Clerical	1		1
General	1		1
Domestic Science		111	111
Domestic Art		111	111
Total counting none twice.....	77	111	188

METHOD OF ORGANIZATION

The entire school is divided by classes into two parts. The first division is on the farm and in the shops in the forenoon, the young women of these classes taking domestic science and art in the forenoon. While the first division is taking these courses the second division is pursuing the scholastic courses.

In the afternoon the first division takes the scholastic subjects and the second division is on the farm and in the shops. In this way the entire school receives training alike in scholastic subjects and in agriculture and industry.

STUDENT WORKERS

All the work of the place is done by the directors and the students, excepting certain jobs demanding special skill. There is a decided advantage in this that the students feel some responsibility for the upkeep of the place and are personally interested in the work. There is, however, a disadvantage in the fact that students leave by graduation about the time they become somewhat skilled.

The use of tractors, reapers, mowers and up-to-date machinery is of considerable importance in training the young men. Not only do the students operate this machinery, but they keep it in repair. Further, the students have erected a substantial implement shed, chickeries, brooder-houses and laying-houses for the poultry on the

State farm. They have kept all buildings and tools in repair with the exception of tinwork and special plumbing.

PROGRESS IN THE BIENNIUM

The biennium marks considerable real progress at the Eastern Branch. The addition of a special director of horticulture and floriculture and teacher of botany has aroused considerable enthusiasm among the students and has resulted in marked improvement in the appearance of the grounds, and in the productivity of the orchards. Likewise the appointment of a director of poultrycraft has resulted in the development of a fine flock of birds. Students have elected these courses for major work.

The girls have made steady progress in home economics, both science and art.

COUNTY DEMONSTRATION

Mr. Martin has travelled widely and has greatly influenced the farmers in securing better results, checking animal and plant diseases, and encouraging the men of the soil at their important tasks. His field is too large, however, and should be divided and an additional agent appointed.

FARMERS' CONFERENCE

The custom of more than twenty years' standing, in the holding near the end of April, of a conference of farmers, is still kept up. More attention should be given to practical farm problems and less to general picnic affairs. It is suggested that practical farmers bring in reports of work done and results achieved the past year and form plans for the coming year. The vital problem of marketing should have special attention.

FARM DRAINAGE

A partial system of drainage has been installed on the State farm. This improves the experimental plots and at the same time demonstrates the value of drainage to these flat lands.

Practically the whole Eastern Shore greatly needs a scientific system of drainage.

IMMEDIATE NEEDS

This report would be incomplete without reference to the future and the needs of the Eastern Branch.

The first and most outstanding need is a corps of trained directors and teachers who can thoroughly adapt the work in agriculture, horticulture, animal industry and the like to the best educational ideals.

This newer idea in education, of making the farm, garden and orchard a real laboratory of scientific training, is one most promising of results as it is one of the most difficult of application. It is no easy task to find teachers who have the talent and the training for thorough work, but they must be found. This involves added teachers and increased salaries.

There is need of a good building for classrooms, laboratories and administration. The temporary Y. M. C. A. hut purchased after our big fire is entirely inadequate.

As reported two years ago there is need of additional land for farming and grazing and a forest plot to teach forestry and to supply wood and lumber for the farm.

A full and complete statement of needs, with reasons for them, will accompany the budget.

GREAT VALUE OF CO-OPERATION

We again wish to go on record expressing our high appreciation of the splendid co-operation of yourself as President of the University and of your able staff. You have been of very great service to us.

Mention should also be made of the valuable advice of Mr. Charles C. Gelder of the Board of Regents.

The Board of Trustees and the officers of Morgan College have co-operated financially and in many other ways to make the work go on successfully. The co-operation of white men and colored men in a common task of great importance augurs well for the future of this school.

Respectfully submitted,

J. O. SPENCER, *President Eastern Branch.*

Financial Department

*To the President of the University,
College Park, Md.*

Sir: I submit herewith a statement of the requested State appropriations for the triennium ending September 30, 1927, and a detailed statement of the receipts and expenditures for the biennium ended September 30, 1923, for those branches of the University located at College Park, Ridgely and Princess Anne. Statements of the financial operations of the Baltimore schools, the University Hospital, Live Stock Sanitary Service, State Department of Forestry, Maryland Geological Survey and Maryland Weather Service will be found elsewhere in the report.

A comparison of the figures in this statement with similar statistics from other State universities and colleges will disclose the fact that the financial affairs of this institution have been economically and judiciously administered. Reference to the table, compiled from statistics secured through the United State Bureau of Education, will show that in practically all other universities of equal size, much larger appropriations are made for both buildings and maintenance. In many States, as these statistics show, more is appropriated for the support of the agricultural colleges alone than is appropriated for this entire institution, including the College of Agriculture, the State Board of Agriculture and all its other branches. Its broad field of activities and its widely recognized accomplishments, with limited resources, is evidence that the taxpayers of Maryland are receiving full value for every dollar they have invested in their State University.

The amount of cash handled through the College Park offices was approximately half a million dollars more than for the preceding biennium. The increased volume of work was taken care of with no additions to the clerical force, which has been at all times inadequate to properly care for essential details. Reference to Table No. XII, showing average costs of administrative offices in fifty-eight State universities and colleges, gives a much lower cost at this institution than the general average. Attention was called in the last biennial report to the need for additional assistance in order that old records may be gathered from attics and other unsafe places and put into condensed form for future reference, when the history of this institution shall be written. It cannot be done with the present force and unless it is soon attended to the history of the financial development

and other data of value will be lost. No safe or adequate filing space is now available for these ancient detailed records.

The biennium was closed with a deficiency in the General University Fund for educational purposes, and in several of the revolving funds. The details are shown in Table No. III. Table No. IV, giving a statement of the assets and liabilities in these funds, shows a net deficit of \$18,502.13.

When the present administration assumed control in July, 1917, the records showed a cash balance of \$1,678.47. Bills unpaid at that time totaled \$6,297.09, plus a loan which had been made from the Soil Fund of \$13,000, making the net deficit \$17,618.62. The present deficit is \$883.51 in excess of the original deficiency assumed by the present administration. A deficiency appropriation of \$20,000 was made in 1918—\$10,000 to be paid annually—to take care of increased costs during the war period. This was not sufficient to meet the increase in costs of supplies and other unusual expenses incident to the work of the Student Army Training Corps. The old deficit has been carried along from year to year. It is expected that with the most rigid curtailment of expenditures during the year 1923-1924 the present deficit will be entirely cleared up.

The only other fund in which an overdraft exists is the Station Farm Fund. The overdraft of \$7,560.18 which existed in this fund at the beginning of the biennium has been reduced to \$2,147.50 and this will be cleared up before the close of the year 1924.

All Federal funds have been audited and approved by Federal auditors. The State Auditor has completed his audit to September 30, 1922, and copy of his certificate of audit is shown herewith.

Respectfully submitted,

MAUDE F. MCKENNEY,
Financial Secretary.

COPY OF CERTIFICATE OF THE STATE AUDITOR

December 18, 1923.

*Dr. Albert F. Woods, President,
University of Maryland,
College Park, Md.*

Dear Sir: This office has completed an audit of the books and accounts of the UNIVERSITY OF MARYLAND for the fiscal year ending September 30, 1922, and found same to be correct and supported by the proper vouchers.

We transmit herewith a copy of a statement showing cash receipts and disbursements of said institution for the period named.

Yours very truly,

(Signed) LEWIS M. MILBOURNE,
State Auditor.

TABLE 1

UNIVERSITY OF MARYLAND—COLLEGE PARK

SUMMARY OF RECEIPTS AND EXPENDITURES FOR THE BIENNIUM ENDED SEPTEMBER 30, 1923.

GENERAL UNIVERSITY:

	Expenditures		Receipts		Total Expenditures	Total Receipts	Balances Dr. Bal.	Sept., 30, 1923 Cr. Bal.
	1921-1922	1922-1923	1921-1922	1922-1923				
Balance October 1, 1921			\$ 35,849.45					
Receipts (Table 3A)			607,538.60	\$816,229.61				
Expenditures (Tables 3B-5)	630,011.75	823,122.29						
Balance Sept. 30, 1923 (Table 2)								\$6,483.62

Totals—General University

	\$630,011.75	\$823,122.29	\$643,388.05	\$816,229.61	\$1,453,134.04	\$1,459,617.66		\$6,483.62
--	--------------	--------------	--------------	--------------	----------------	----------------	--	------------

EASTERN BRANCH:

Balance October 1, 1921			\$3,259.40					
Receipts (Table 6)			25,979.35	\$25,678.28				
Expenditures (Tables 5-6)	\$26,665.36	\$28,022.63						
Balance Sept. 30, 1923 (Table 2)								\$229.04

Totals—Eastern Branch

	\$26,665.36	\$28,022.63	\$29,238.75	\$25,678.28	\$54,687.99	\$54,917.03		\$229.04
--	-------------	-------------	-------------	-------------	-------------	-------------	--	----------

EXPERIMENT STATION:

Balance October 1, 1921			\$2,956.55					
Receipts (Table 7)			\$111,240.41	\$137,759.95				
Expenditures (Tables 5-7)	117,045.12	133,857.69						\$1,054.10
Balance Sept. 30, 1923 (Table 2)								

Totals—Experiment Station

	\$117,045.12	\$133,857.69	\$114,196.96	\$137,759.95	\$250,902.81	\$251,956.91		\$1,054.10
--	--------------	--------------	--------------	--------------	--------------	--------------	--	------------

TABLE 1—Continued

UNIVERSITY OF MARYLAND—COLLEGE PARK—Continued

SUMMARY OF RECEIPTS AND EXPENDITURES FOR THE BIENNIIUM ENDED SEPTEMBER 30, 1923.

	Expenditures		Receipts		Total Expenditures	Total Receipts	Balances Sept. 30, 1923	
	1921-1922	1922-1923	1921-1922	1922-1923			Dr. Bal.	Cr. Bal.
EXTENSION SERVICE:								
Balance October 1, 1921.....								
Receipts (Table 8).....			\$17,067.49					
Expenditures (Tables 5-8).....	\$171,850.55	\$188,507.95	177,224.23	\$188,718.35				
Balance Sept. 30, 1923 (Table 2).....								
Totals—Extension Service ..	\$171,850.55	\$188,507.95	\$194,291.72	\$188,718.35	\$360,358.50	\$383,010.07		\$22,651.57
STATE DAIRYMEN'S ASSOCIATION:								
Receipts (Table 9).....	\$5,000.00	\$5,000.00						
Expenditures (Included with Extension Tables 5-9).....			\$5,000.00	\$5,000.00				
Totals—State Dairymen's Association	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$10,000.00	\$10,000.00		
Grand Totals—All Funds	\$950,572.78	\$1,178,510.56	\$986,115.48	\$1,173,386.19	\$2,129,083.34	\$2,159,501.67		\$30,418.33

TABLE 2

RECONCILIATION OF CASH ACCOUNT WITH BANK AND CASH
BALANCES SEPTEMBER 30th, 1923

Total receipts for biennium.....	\$2,159,501.67	
Total expenditures for biennium.....	2,129,083.34	
	<hr/>	
*Excess of receipts over expenditures.....	\$	30,418.33
Cash balances as follows:		
General University Funds—		
Union Trust Company of Maryland.....	\$3,536.27	
Cash on hand.....	2,947.35	
	<hr/>	6,483.62
Extension Service Funds—		
Citizens' National Bank of Laurel.....		22,651.57
Experiment Station Funds:		
First National Bank of Hyattsville.....	\$1,031.47	
Bank of Ridgely.....	22.63	
	<hr/>	1,054.10
Eastern Branch Funds—		
Citizens' National Bank of Laurel.....		229.04
	<hr/>	
Total Cash Balance.....	\$	30,418.33

* The Federal fiscal year began July 1st, 1923, at which time the annual payment on the Federal Smith-Lever and Special Extension funds, the annual payment on the Morrill-Nelson fund and the quarterly payment on the Hatch and Adams funds was made. Approved projects, or other fixed liabilities, have been set up against all balances shown above.

TABLE 3

STATEMENT OF GENERAL UNIVERSITY ACADEMIC AND REVOLVING FUNDS FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923.

	Expenditures		Total	Receipts		Total	Balances Sept. 30, 1923	
	1921-1922	1922-1923		1921-1922	1922-1923		Dr. Bal.	Cr. Bal.
General University	\$455,112.49	\$622,617.14	\$1,077,729.63	\$432,516.58	\$604,691.40	\$1,037,207.98	\$40,521.65	
Morrill Nelson	52,533.34	47,741.70	100,275.04	87,775.16	50,000.00	137,775.16		37,500.12
Federal Smith-Hughes	9,356.66	8,595.52	17,862.18	7,625.09	8,413.29	16,038.38	1,823.80	
Federal Board for Vocational Training	21,085.61	32,187.62	53,273.23	19,140.55	33,773.14	52,913.69	359.54	
Student Supply Store	19,730.85	32,492.71	52,223.56	26,772.14	33,080.76	59,852.90		7,629.34
University Press	8,573.14	7,633.79	16,206.93	7,365.09	7,772.92	15,138.01	1,068.92	
University Storehouse	8,390.25	7,848.19	16,238.44	7,461.34	8,320.64	15,781.98	456.46	
Advanced Registry Testing	128.63	4,554.74	4,683.37	195.30	4,313.32	4,508.62	174.75	
Athletic Association Transfer of fees	9,975.00	11,985.00	21,960.00	9,975.00	11,985.00	21,960.00		
State Board of Agriculture	5,000.00	5,000.00	10,000.00	5,000.00	5,000.00	10,000.00		
Building and Equipment Funds	12,640.71	10,830.51	23,471.22	12,076.73	17,153.77	29,230.50		5,759.28
State Working Fund	50,000.00	60,000.00	110,000.00	50,000.00	60,000.00	110,000.00		
	\$652,526.68	\$851,396.92	\$1,503,923.60	\$665,902.98	\$844,504.24	\$1,510,407.22	\$44,405.12	\$50,888.74
						1,503,923.60		44,405.12
Net credit balance—September 30, 1923						\$6,483.62		\$6,483.62

TABLE 3-A

STATEMENT OF RECEIPTS FOR GENERAL UNIVERSITY (NOT INCLUDING BALTIMORE SCHOOLS) FOR THE BIENNIIUM
ENDED SEPTEMBER 30, 1923

	General Receipts 1921-1922	General Receipts 1922-1923	U. S. Government 1921-1922	U. S. Government 1922-1923	Revolving Fund 1921-1922	Revolving Fund 1922-1923	Total Receipts for Biennium
FROM STATE APPROPRIATION:							
For maintenance.....	\$165,476.89	\$213,310.45	.....	.....	.....	.....	\$378,787.34
For interest on invested funds.....	7,374.80	6,831.93	.....	.....	.....	.....	14,206.73
For Executive expenses.....	5,000.00	5,000.00	.....	.....	.....	.....	10,000.00
Totals—State of Maryland.....	\$177,851.69	\$225,142.38	.....	.....	.....	.....	\$402,994.07
FROM STUDENT FEES:							
For Collegiate Student Fees.....	\$162,924.52	\$218,860.62	.....	.....	.....	.....	\$381,785.14
For Summer School Fees.....	13,820.75	15,573.68	.....	.....	.....	.....	29,394.43
For Dairy Short Course.....	.....	55.00	.....	.....	.....	.....	55.00
For Veterans' Bureau—2 year students.....	.....	.....	\$16,500.00	\$33,773.14	.....	.....	50,273.14
Totals—Student Fees.....	\$176,745.27	\$234,489.30	\$16,500.00	\$33,773.14	.....	.....	\$461,507.71
FROM LICENSE FEES:							
For fertilizer, feed and lime licenses and tonnage fees.....	\$30,300.51	\$41,677.18	.....	.....	.....	.....	\$71,977.69
Totals—License Fees.....	\$30,300.51	\$41,677.18	.....	.....	.....	.....	\$71,977.69
FROM SALES:							
For meals and misc. sales other than boarding students.....	\$8,729.43	\$7,275.53	.....	.....	.....	.....	\$16,004.96
For sales from garden and greenhouse.....	2,124.15	2,146.75	.....	.....	.....	.....	4,270.90
For sales from Home Economics Novelty Shop.....	52.49	69.62	.....	.....	.....	.....	122.11
For sales of old machinery, typewriter, drums and carboys, etc.....	100.00	86.50	.....	.....	.....	.....	186.50
Totals—Sales.....	\$11,006.07	\$9,578.40	.....	.....	.....	.....	\$20,584.47

TABLE 3-A—Continued

STATEMENT OF RECEIPTS FOR GENERAL UNIVERSITY (NOT INCLUDING BALTIMORE SCHOOLS) FOR THE BIENNium
ENDED SEPTEMBER 30, 1923

FROM MISCELLANEOUS SOURCES:

For barber shop commissions.....	\$217.96	\$182.77		\$400.73
For rental of Goddard property	130.66	144.69		275.35
For interest on deposits.....	579.56	309.40		888.96
For fees for cashing checks.....		62.80		62.80
For rental of truck.....		25.00		25.00
For Music Festival tickets.....	409.50	431.00		840.50
For miscellaneous.....	427.05	15.00		442.05

Totals from Miscellaneous Sources..

FROM REIMBURSEMENTS AND REFUNDS:

For personal telephone calls.....	\$305.18	\$400.89	\$706.07
For salary—State Roads Commission.....	2,187.50	1,750.00	3,937.50
For salary—Md. State Board of Education.....		600.00	600.00
For salaries—Baltimore Schools.....	1,558.49		1,558.49
For overcharges—freight and express.....	148.09	12.61	160.70
For service—Extension Service.....	900.00	2,000.00	2,900.00
For unused mileage.....	45.03	18.21	63.24
For equipment—State Dairymen's Assn.....	527.78		527.78
For equipment for oxidation plant.....		674.83	674.83
For expenses—Animal Pathology Laboratory.....		868.96	868.96
For fellowship—Soils Improvement Committee.....		600.00	600.00
For U. S. Government uniforms, etc.....		1,072.10	1,072.10
For returned equipment—Chemistry Dept.....		135.98	135.98
For adjustment of bill.....		.35	.35
For refund of salary.....		43.33	43.33
Total—Reimbursement and Refunds.....	\$5,672.07	\$8,177.26	\$13,849.33

TABLE 3-A—Continued

STATEMENT OF RECEIPTS FOR GENERAL UNIVERSITY (NOT INCLUDING BALTIMORE SCHOOLS) FOR THE BIENNIIUM ENDING SEPTEMBER 30, 1923				
	General Receipts 1921-1922	U. S. Government 1921-1922	Revolving Fund 1921-1922	Total Receipts for Biennium
FROM PAYMENT OF INSURANCE:				
For loss on barn	\$75.00			\$75.00
For loss on awnings	27.00			27.00
Total—Fire Loss	\$102.00			\$102.00
FROM REVOLVING FUNDS:				
Student Supply Store			\$33,080.76	\$55,906.95
University Press			7,772.92	15,111.76
Advanced Registry—Testing			195.80	4,508.62
University Storehouse			7,461.34	15,781.98
Total Revolving Funds			\$37,821.67	\$91,309.31
FROM FEDERAL SMITH-HUGHES:				
For offset to State Smith-Hughes		\$10,265.64	\$8,413.29	\$18,678.93
Total Federal Smith-Hughes		\$10,265.64	\$8,413.29	\$18,678.93
FROM DEPARTMENTAL TRANSFERS:				
For transfer of Library charges	\$770.97			\$2,028.54
For transfer of gasoline and oil	405.33			900.43
For transfer of ice	1,181.25			2,010.77
For miscellaneous service charges—trans- fer of repairs, coal, etc.	530.94			1,177.19
For work on barn—Experiment Station				2,904.54
For transfer of balances to coal budget				1,931.61
	\$2,888.49	\$8,064.59		\$10,953.08
From credit by cancelled checks	\$114.23			\$114.23

TABLE 3-B

STATEMENT OF EXPENDITURES FOR GENERAL UNIVERSITY—(NOT INCLUDING BALTIMORE SCHOOLS
FOR THE BIENNIUM ENDED SEPTEMBER 30, 1923.

	General University		U. S. Government		Revolving Funds		Bd. Reg. Bldg. Fund		Total Expenditures
	1921-1922	1922-1923	1921-1922	1922-1923	1921-1922	1922-1923	1921-1922	1922-1923	for Biennium
ADMINISTRATIVE AND GENERAL OVERHEAD:									
Executive, registrar and dean of women	\$43,030.90	\$52,037.76							\$95,068.66
Library	5,571.40	7,057.50							12,628.90
Publications	4,823.93	5,552.28							10,376.21
General service (repairs, alterations, mail, transportation and purchasing)	90,823.18	110,628.11							201,451.29
Executive expenses	5,000.00	5,000.00							10,000.00
Total general expense	\$149,249.41	\$180,275.65							\$329,525.06
UNIVERSITY—GENERAL:									
Animal Industry Department	\$14,261.02	22,136.76	\$5,200.00	\$3,940.82					\$45,538.60
College of Agriculture	37,589.79	43,841.49	13,050.00	15,349.94					109,831.22
College of Arts and Sciences	64,472.58	101,137.63	15,800.00	11,909.28					193,319.49
College of Education	2,151.97	6,272.49							8,424.46
College of Education—Smith-Hughes	7,810.56	8,505.50	7,884.91	8,505.52					32,706.49
College of Engineering	24,678.20	27,322.38	5,483.34	9,041.66					66,525.58
College of Home Economics	5,482.09	6,592.22	500.00						12,574.31
Graduate School	1,399.53	8,311.80							9,711.33
Military Science Department	2,101.37	5,545.36							7,646.73
Physical Education	3,951.38	7,858.27							11,809.65
Summer School	4,617.24	5,637.64							10,254.88
Veterans' Bureau—Vocational Training			18,308.37	23,009.68					41,318.05
Total University—General	\$168,515.73	\$243,161.54	\$66,226.62	\$71,756.90					\$549,660.79
SERVICE ENTERPRISES:									
Dining hall and laundry	\$92,750.28	\$115,731.74							\$208,482.02
Department of Health	2,681.90	3,059.56							5,741.46
Total service enterprises	\$95,432.18	\$118,791.30							\$214,223.48



TABLE 3-B—Continued

STATEMENT OF EXPENDITURES FOR GENERAL UNIVERSITY—(NOT INCLUDING BALTIMORE SCHOOLS
FOR THE BIENNIUM ENDED SEPTEMBER 30, 1923.

	General University		U. S. Government		Revolving Funds		Bd. Reg. Bldg. Fund	Total Expenditures	
	1921-1922	1922-1923	1921-1922	1922-1923	1921-1922	1922-1923	1921-1922	1922-1923	for Biennium
STUDENT REFUNDS	\$8,692.22	\$3,372.38							\$12,064.60
REVOLVING FUNDS:									
Students supply store					\$19,730.85	\$26,319.37			\$46,050.22
University press					7,140.90	7,633.79			14,774.69
University storehouse					8,305.79	7,848.19			16,153.98
Advancing registry testing					128.63	4,554.74			4,683.37
Total revolving funds					\$35,306.17	\$46,356.09			\$81,662.26
BOARD OF REGENTS BUILDING FUND:									
Pay roll and materials handled through College Park office							\$12,640.71	\$10,830.51	\$23,471.22
MISCELLANEOUS:									
Departmental transfers	\$2,649.21	\$4,092.92							\$6,742.13
Payment of athletic fees	9,975.00	11,985.00							21,960.00
Payment of loan to Union Trust Co.	25,000.00	65,000.00							90,000.00
Payment of State working fund	50,000.00	60,000.00							110,000.00
Transfer to Eastern Branch	12,500.00	7,500.00							20,000.00
Total miscellaneous payments	\$100,124.21	\$148,577.92							\$248,702.13
Total charges for biennium	\$522,013.75	\$694,178.79	\$66,226.62	\$71,756.90	\$35,306.17	\$46,356.09	\$12,640.71	\$10,830.51	\$1,459,309.54
LESS CORRECTIONAL ENTRIES:									
General University	\$26.25								
Smith-Hughes	74.41								
Departmental Transfers	6,053.00								
State Board of Agriculture	21.84	6,175.50							\$6,175.50
Total cash expenditures	\$515,838.25	\$694,178.79	\$66,226.62	\$71,756.90	\$35,306.17	\$46,356.09	\$12,640.71	\$10,830.51	\$1,453,134.04



TABLE 3-A—Continued

STATEMENT OF RECEIPTS FOR GENERAL UNIVERSITY (NOT INCLUDING BALTIMORE SCHOOLS) FOR THE BIENNIUM ENDED SEPTEMBER 30, 1923						
	General Receipts 1921-1922	U. S. Government 1921-1922	Revolving Fund 1921-1922	Total Receipts for Biennium		
FROM MORRILL-NELSON FUND:						
U. S. appropriation.....	.....	\$50,000.00	.....	.....		\$100,000.00
FROM BOARD OF REGENTS						
BUILDING FUND:						
For Pay Roll and material handled through College Park Offices.....	\$11,737.40	.....	.....	.....		\$22,891.17
For loan to complete gymnasium.....	6,000.00	.....	.....	.....		6,000.00
Total Building Funds.....	\$11,737.40	.....	.....	.....		\$28,891.17
FROM LOANS:						
Union Trust Company.....	\$24,870.83	.....	.....	.....		\$89,870.83
Working Funds.....	50,000.00	.....	.....	.....		110,000.00
Total Loans.....	\$74,870.83	.....	.....	.....		\$199,870.83
From balance Oct. 1, 1921.....	\$35,849.45	.....	.....	.....		\$35,849.45
Grand Totals of Cash Received.....	\$528,800.74	\$76,765.64	\$37,821.67	\$92,186.43		\$1,459,617.66

TABLE 4

STATEMENT OF BALANCES IN GENERAL UNIVERSITY AND REVOLVING FUNDS
AS OF SEPTEMBER 30, 1923

SHOWING OVERDRAFTS AND CREDIT BALANCES WITH CREDITS DUE

	GENERAL UNIVERSITY		REVOLVING FUNDS		BALANCES	
	Cash Deficit	Credit Due	Cash Deficit	Credit Due	Debit Balance	Credit Balance
GENERAL UNIVERSITY:						
Cash deficit Sept. 30, 1923	\$40,521.65					
Due from State Roads Com.		437.50				
Due from Baltimore schools		1,500.00				
Unearned insurance		8,603.97				
Bills for 1923-24 paid in 1922-23:						
For chemistry		4,624.47				
For fuel and freight		1,578.25				
Deficit acct. biennium 1921-23	\$40,521.65	\$16,744.19			\$23,777.46	
FEDERAL SMITH-HUGHES:						
Cash deficit Sept. 30, 1923			\$1,823.80			
Due from U. S. Government				\$1,823.80		
VETERAN'S BUREAU:			\$1,823.80			
Cash deficit Sept. 30, 1923						
Due from Veteran's Bureau			\$359.54			
Credit balance			\$359.54	\$5,031.00		\$4,671.46
STUDENT SUPPLY STORE:						
Credit balance, Sept. 30, 1923						
Bills receivable				\$7,629.34		
Bills payable—approximately			\$7,000.00	414.00		
Credit balance			\$7,000.00	\$8,043.34		\$1,043.34

TABLE 5

COMMODITY CLASSIFICATION—ALL FUNDS—FOR BIENNIUM ENDED SEPTEMBER 30, 1923.

	1921-1922 General University	1922-1923 General University	Total General University	1921-1922 Experiment Station	1922-1923 Experiment Station	Total Experiment Station	1921-1922 Extension Service	1922-1923 Extension Service	Total Extension Service	1921-1922 Eastern Branch	1922-1923 Eastern Branch	Total Eastern Branch	1921-1922 Totals All Funds	1922-1923 Totals All Funds	Totals For Biennium
OPERATING EXPENSES:															
Salaries	\$229,140.89	\$310,316.30	\$539,457.19	\$57,635.09	\$64,671.63	\$122,306.72	\$140,366.94	\$148,168.71	\$288,535.65	\$14,653.00	\$16,659.97	\$31,312.97	\$41,795.92	\$539,816.61	\$981,612.53
Wages	80,438.25	94,752.54	175,190.79	25,608.95	25,074.04	50,682.99	578.00	957.90	1,535.90	1,787.35	1,651.50	3,438.85	108,112.55	122,435.98	230,548.53
Meats and Groceries	61,806.85	77,771.40	139,578.25										61,806.85	77,771.40	139,578.25
Chemicals and laboratory supplies	4,388.67	6,802.96	11,191.63	6,379.79	4,767.37	11,147.16				25.38	275.45	300.83	10,793.84	11,845.78	22,639.62
Heat, light and power	19,214.26	20,511.63	39,725.89	2,387.94	2,555.49	4,943.43	360.00	1,000.00	1,360.00	3,565.52	5,508.05	9,073.57	25,527.72	29,575.17	55,102.89
Postage, stationery and small printing	7,548.89	9,645.38	17,194.27	726.72	910.55	1,637.27	2,776.50	3,057.49	5,833.99	269.31	240.79	510.10	11,321.42	13,854.21	25,175.63
Publications	4,823.93	5,552.28	10,376.21	3,283.87	2,266.64	5,550.51	2,833.40	2,557.55	5,390.95				10,911.20	10,376.47	21,317.67
Telephone and telegraph	2,136.54	2,925.55	5,062.09	215.28	234.72	450.00	482.52	666.60	1,148.52	17.16		17.16	2,851.50	3,826.27	6,677.77
Freight and express	9,655.64	9,712.98	19,368.62	1,761.91	1,707.74	3,469.65	61.31	606.33	667.64	642.84	193.90	836.74	12,121.70	12,220.95	24,342.65
Seeds, plants and sundries	8,774.85	7,819.63	16,594.48	2,155.37	2,987.93	5,143.30	788.78	927.22	1,716.00	1,133.11	1,252.48	2,385.59	12,852.11	12,987.26	25,839.37
Fertilizers				676.99	1,663.29	2,340.28							676.99	1,663.29	2,340.28
Supplies and repairs for trucks	2,329.94	3,292.08	5,622.02		381.31	381.31							2,329.94	3,673.39	6,003.33
Feed for stock				4,990.35	4,615.09	9,605.44							4,990.35	4,615.09	9,605.44
Traveling expenses	5,628.65	8,801.74	14,430.39	2,910.14	2,773.45	5,683.59	27,011.47	33,143.87	60,155.34				35,550.26	44,719.06	80,269.32
Commencement expenses	700.10	172.60	872.70										700.10	172.60	872.70
Association dues	505.50	470.75	976.25		161.03	161.03	13.00		13.00				518.50	631.78	1,150.28
Rental of property	1,232.52	882.52	2,115.04	260.00	210.00	500.00							1,492.52	1,122.52	2,615.04
Music	730.75	791.86	1,522.61										730.75	791.86	1,522.61
Premiums on insurance	443.77	8,075.79	8,519.56	286.30	4,334.06	4,620.36							730.07	12,409.85	13,139.92
Chauffeurs' licenses and fees	27.00	48.25	75.25										27.00	48.25	75.25
Cleaning rugs and windows	76.25	240.00	316.25				8.00		8.00				84.25	240.00	324.25
Loss of military goods	129.92		129.92										129.92		129.92
Diamondback for distribution	175.00	100.00	275.00										175.00	100.00	275.00
Year book for distribution	320.00		320.00										320.00		320.00
Advertising photos for newspapers, etc.	8.25	68.68	76.93	19.15		19.15	15.00		15.00				42.40	68.68	111.08
Honorariums	310.00	185.00	495.00										310.00	185.00	495.00
Repairs to county roads	76.00		76.00										76.00		76.00
Rent of chairs for Farmers' Day	50.00		50.00										50.00		50.00
Premium on bonds, etc.	90.40	50.00	140.40	130.20		130.20	11.36	15.50	26.86	25.00		25.00	256.96	65.50	322.46
Flags and covers	97.56		97.56										97.56		97.56
Department transfers and transfer of funds	3,412.47	4,478.84	7,891.31										3,412.47	4,478.84	7,891.31
Student refunds	8,692.22	3,372.38	12,064.60										8,692.22	3,372.38	12,064.60
Interest on loans		463.33	463.33											463.33	463.33
Uniforms for R. O. T. C.*		1,080.00	1,080.00											1,080.00	1,080.00
Rent of bus and autos for guests, etc.		327.00	327.00											327.00	327.00
Miscellaneous—Refunds, etc.		332.85	332.85		846.52	846.52		108.25	108.25					1,287.62	1,287.62
Total Operating Expenses	\$452,965.07	\$579,044.32	\$1,032,009.39	\$109,428.05	\$120,190.86	\$229,618.91	\$175,306.28	\$191,208.82	\$366,515.10	\$22,118.67	\$25,782.14	\$47,900.81	\$759,818.07	\$916,226.14	\$1,676,044.21

* Reimbursed by U. S. Government.

TABLE 5—Continued

COMMODITY CLASSIFICATION—ALL FUNDS—FOR BIENNIUM ENDED SEPTEMBER 30, 1923.

	1921-1922 General University	1922-1923 General University	Total General University	1921-1922 Experiment Station	1922-1923 Experiment Station	Total Experiment Station	1922-1923 Extension Service	1921-1922 Extension Service	Total Extension Service	1921-1922 Eastern Branch	1922-1923 Eastern Branch	Total Eastern Branch	1921-1922 Totals All Funds	1922-1923 Totals All Funds	Total For Biennium
CAPITAL OUTLAY:															
Repairs and permanent improvements	\$16,366.57	\$20,051.17	\$36,417.74	\$2,302.97	\$4,082.98	\$6,385.95				\$2,981.61	664.14 } 212.66 }	\$3,645.75 }	\$21,651.15	\$25,010.95	\$46,662.10
Scientific apparatus	5,242.98	6,561.29	11,804.27	1,605.51	2,228.72	3,834.23	28.65	\$886.05	\$914.70		110.00	110.00	6,877.14	9,786.06	16,663.20
Furniture and fixtures	16,110.19	21,139.55	37,249.74	340.93	1,891.96	2,232.89	959.91	1,074.87	2,034.78	629.53	121.67	754.20	18,040.56	24,231.05	42,271.61
Tools, machinery and appliances	4,196.05	5,339.05	9,535.10	2,000.95	3,666.82	5,667.77	452.59	195.72	648.31	935.55	1,049.97	1,985.52	7,585.14	10,251.56	17,836.70
Library	3,739.56	3,992.97	7,732.53	337.16	450.00	787.16	103.12	142.49	245.61				4,179.81	4,585.46	8,765.30
Live stock	275.00		275.00	1,029.55	1,346.35	2,375.90					79.05	79.05	1,304.55	1,425.40	2,729.95
Motor vehicles		4,612.35	4,612.35											4,612.35	4,612.35
Purchase of land		2,500.00	2,500.00											2,500.00	2,500.00
Total Capital Outlay	\$45,930.35	\$64,196.38	\$110,267.73	\$7,617.07	\$13,666.83	\$21,283.90	\$1,544.27	\$2,299.13	\$3,843.40	\$4,546.69	\$2,240.49	\$6,787.18	\$59,638.38	\$82,402.83	\$142,041.21
REVOLVING FUNDS:															
Students' Supply Store	\$18,105.05	\$23,562.25	\$41,667.30										\$18,105.05	\$23,562.25	\$41,667.30
University Press	4,581.28	3,976.15	8,557.43										4,581.28	3,976.15	8,557.43
University Storehouse	8,305.79	7,848.19	16,153.98										8,305.79	7,848.19	16,153.98
Total Revolving Funds	\$30,992.12	\$35,386.59	\$66,378.71										\$30,992.12	\$35,386.59	\$66,378.71
Totals Classified Expenditures	\$529,887.54	\$678,627.29	\$1,208,514.83	\$117,045.12	\$133,857.69	\$250,902.81	\$176,850.55	\$193,507.95	\$370,358.50	\$26,665.36	\$28,022.63	\$54,687.99	\$850,448.57	\$1,034,015.56	\$1,884,464.13
Payment to Athletic Association of fees collected	\$9,975.00	\$11,985.00	\$21,960.00										\$9,975.00	\$11,985.00	\$21,960.00
Payment of loan—Union Trust Co.	25,000.00	65,000.00	90,000.00										25,000.00	65,000.00	90,000.00
Check not honored by bank		10.00	10.00											10.00	10.00
Total Expenditures	\$564,862.54	\$755,622.29	\$1,320,484.83	\$117,045.12	\$133,857.69	\$250,902.81	\$176,850.55	\$193,507.95	\$370,358.50	\$26,665.36	\$28,022.63	\$54,687.99	\$885,423.57	\$1,111,010.56	\$1,996,434.13
Transfers Morrill Fund to Eastern Branch	\$12,500.00	\$7,500.00	\$20,000.00										\$12,500.00	\$7,500.00	\$20,000.00
Transfer of State working fund to State of Mary- land account	50,000.00	60,000.00	110,000.00										50,000.00	60,000.00	110,000.00
Transfer of balances to other departments	2,649.21		2,649.21										2,649.21		2,649.21
Grand Totals for Biennium—College Park	\$630,011.75	\$823,122.29	\$1,453,134.04	\$117,045.12	\$133,857.69	\$250,902.81	\$176,850.55	\$193,507.95	\$370,358.50	\$26,665.36	\$28,022.63	\$54,687.99	\$950,572.78	\$1,178,510.56	\$2,129,083.34



TABLE 4—Continued

STATEMENT OF BALANCES IN GENERAL UNIVERSITY AND REVOLVING FUNDS
AS OF SEPTEMBER 30, 1923
SHOWING OVERDRAFTS AND CREDIT BALANCES WITH CREDITS DUE

	GENERAL UNIVERSITY		REVOLVING FUNDS BUILDING FUNDS		BALANCES September 30, 1923	
	Cash Deficit	Credit Due	Cash Deficit	Credit Due	Debit Balance	Credit Balance
UNIVERSITY PRESS:						
Cash deficit			\$1,068.92			
Bills receivable				\$486.15		
Deficit account 1921-23			\$1,068.92	\$486.15	\$582.77	
UNIVERSITY STOREHOUSE:						
Cash deficit, Sept. 30, 1923			\$456.46			
Bills receivable				\$456.46		
			\$456.46	\$456.46		
ADVANCED REGISTRY TESTING:						
Cash deficit, Sept. 30, 1923			\$174.75			
Due from herd owners			\$346.53			
Bills payable						\$143.30
Credit balance			\$521.28	\$664.58		
BUILDING AND EQUIPMENT FUNDS:						
Credit balance, Sept. 30, 1923				\$5,759.28		
Transfer of loan to be made to Balto.			\$6,000.00			
Reimbursement due				\$240.72		
			\$6,000.00	\$6,000.00		
			\$17,230.00	\$22,505.33	\$24,360.23	\$5,858.10
Totals	\$40,521.65	\$16,744.19		\$17,230.00	\$5,858.10	
	16,744.19					
Net balances	\$23,777.46			\$5,275.33	\$18,502.13	

TABLE 6

STATEMENT OF THE EASTERN BRANCH—RECEIPTS AND EXPENDITURES FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Cr.
	1921-1922	1922-1923		1921-1922	1922-1923		
EASTERN BRANCH FEDERAL FUND:							
Balance October 1, 1921.....				\$1,009.40		\$1,009.40	
By transfer from Morrill Fund.....				12,500.00	\$7,500.00	20,000.00	
Interest on deposits.....				39.60		39.60	
Expenditures:							
Salaries.....	\$10,533.00	\$9,689.97	\$20,222.97				
Fuel, light, etc.....	222.10		222.10				
Postage and stationery.....	83.99		83.99				
Telephone and telegraph.....	17.16		17.16				
Seeds, plants and sundry supplies.....	160.75		160.75				
Balance September 30, 1923.....							342.03
Totals—Federal Fund.....	\$11,017.00	\$9,689.97	\$20,706.97	\$13,549.00	\$7,500.00	\$21,049.00	\$342.03
EASTERN BRANCH STATE FUND:							
State appropriation.....							
Interest on deposits.....				\$12,420.00	\$18,120.00	\$30,540.00	
Expenditures:				41.39	58.28	99.67	
Salaries.....	\$4,120.00	\$6,970.00	\$11,090.00				
Wages.....	1,787.35	1,651.50	3,438.85				
Laboratory supplies.....	25.38	275.45	300.83				
Heat, light and power.....	3,343.42	5,508.05	8,851.47				
Furniture and fixtures.....	382.78	124.67	507.45				
Postage and stationery.....	185.32	240.79	426.11				
Seeds, plants and sundry supplies.....	972.36	1,252.48	2,224.84				

TABLE 6—Continued

STATEMENT OF THE EASTERN BRANCH—RECEIPTS AND EXPENDITURES FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923—Continued.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Bal.	Cr. Bal.
	1921-1922	1922-1923		1921-1922	1922-1923			
Scientific apparatus.....		110.00	110.00					
Contingent expenses.....	25.00	79.05	104.05					
Repairs to buildings.....		876.80	876.80					
Tools and machinery.....	935.55	1,049.97	1,985.52					
Freight and express.....	642.84	193.90	836.74					
Overdraft September 30, 1923.....							112.99	
Totals—State Fund.....	\$12,420.00	\$18,332.66	\$30,752.66	\$12,461.39	\$18,178.28	\$30,639.67	\$112.99	
EASTERN BRANCH BUILDING FUND:								
Balance October 1, 1921.....				\$2,250.00		\$2,250.00		
From Board of Regents Building Fund.....				978.36		978.36		
Expenditures:								
For building.....	\$2,981.61		\$2,981.61					
For furniture and fixtures.....	246.75		246.75					
Totals—Building Fund.....	\$3,228.36		\$3,228.36	\$3,228.36		\$3,228.36		
Grand Totals—Eastern Branch.....	\$26,665.36	\$28,022.63	\$54,687.99	\$29,238.75	\$25,678.28	\$54,917.03	\$112.99	\$342.03
							Net credit balance	\$229.04

TABLE 7

STATEMENT OF RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Cr.
	1921-1922	1922-1923		1921-1922	1922-1923		
EXPERIMENT STATION STATE FUND:							
State appropriation.....				\$41,900.00	\$63,900.00	\$105,800.00	
Expenditures:							
Salaries.....	\$17,705.50	\$25,331.64	\$43,037.14				
Wages.....	7,874.47	12,838.05	20,712.52				
Publications.....	2,000.00	1,973.35	3,973.35				
Postage and stationery.....	530.58	403.79	934.37				
Freight and express.....	973.18	1,129.64	2,102.82				
Heat, light and power.....	828.87	2,014.70	2,843.57				
Chemicals and laboratory sup- plies.....	190.02	655.73	845.75				
Seeds, plants and sundries.....	678.77	1,886.40	2,565.17				
Fertilizers.....	550.50	1,423.49	1,973.99				
Feed for stock.....	3,550.60	4,420.19	7,970.79				
Library.....	300.00	369.63	669.63				
Tools, machinery and appliances.....	1,866.72	792.91	2,659.63				
Furniture and fixtures.....	268.46	1,152.63	1,421.09				
Scientific apparatus.....	523.28	1,194.75	1,718.03				
Live stock.....	500.00	775.00	1,275.00				
Traveling expenses.....	1,033.95	2,012.70	3,046.65				
Rent of land.....	260.00	240.00	500.00				
Premiums on insurance.....	286.30	3,839.27	4,125.57				
Building and repairs.....	1,978.80	1,132.98	3,111.78				
Supplies and repairs for truck.....		313.15	313.15				
Totals—State Fund.....	\$41,900.00	\$63,900.00	\$105,800.00	\$41,900.00	\$63,900.00	\$105,800.00	

TABLE 7—Continued

STATEMENT OF RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923—Continued.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Cr.
	1921-1922	1922-1923		1921-1922	1922-1923		
STATION FARM FUND:							
Receipts from sales.....				\$16,256.53	\$13,388.49	\$29,645.02	
Interest on deposits.....				158.11	154.26	312.37	
Fellowship reimbursement.....					900.00	900.00	
Credit by cancelled checks.....					50.60	50.60	
Expenditures:							
Overdraft October 1, 1921.....	\$7,560.18		\$7,560.18				
Wages.....	14,558.73		20,879.39				
Printing.....	10.00	\$6,320.66	10.00				
Freight and express.....	452.65	4.18	456.83				
Heat, light and power.....	338.64		338.64				
Laboratory supplies.....	13.67	7.62	21.29				
Seeds, plants and sundry sup- plies.....	296.34	170.00	466.34				
Feed for stock.....	1,439.75	45.90	1,485.65				
Library.....	1.00	1.00	2.00				
Tools, machinery and appliances.....	37.65	6.02	43.67				
Traveling expenses.....	721.94	44.61	766.55				
Association dues and fees.....	143.15	151.50	294.65				
Postage and stationery.....			38.98				
Furniture and fixtures.....		630.00	630.00				
Supplies for truck.....		61.41	61.41				
Totals—Station Farm Fund.....	\$25,573.70	\$7,481.88	\$33,055.58	\$16,414.64	\$14,493.35	\$30,907.99	\$2,147.59

TABLE 7—Continued

STATEMENT OF RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923—Continued.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Cr.
	1921-1922	1922-1923		1921-1922	1922-1923		
BIOLOGICAL LABORATORY:							
Balance October 1, 1921						\$7,208.22	
State appropriation					\$5,500.00	11,000.00	
From sales of serum				5,191.18	10,335.87	15,527.05	
Expenditures:							
Salaries	\$3,925.00	\$3,874.99	\$7,799.99				
Wages	800.00	3,527.02	4,327.02				
Postage and stationery	180.56	503.86	684.42				
Freight and express	139.77	326.41	466.18				
Laboratory supplies (including serum)	5,500.30	3,222.54	8,722.84				
Scientific apparatus	337.50		337.50				
Live stock	529.55	571.35	1,100.90				
Building and repairs	4.80	2,710.70	2,715.50				
Seeds, plants and sundry supplies	\$302.53	\$408.86	\$711.39				
Heat, light and power		420.95	420.95				
Feeding stuffs		149.00	149.00				
Library		61.15	61.15				
Tools, machinery and appliances		2,417.31	2,417.31				
Furniture and fixtures		20.18	20.18				
Traveling		49.76	49.76				
Association dues		4.53	4.53				
Insurance		426.65	426.65				
Laundry		9.35	9.35				
Refunds		609.25	609.25				
Outside experiments		115.26	115.26				
Legal services		18.50	18.50				
Interest		94.16	94.16				
Balance September 30, 1923							\$2,473.48
Totals—Biological Laboratory							
	\$11,720.01	\$19,541.78	\$31,261.79	\$17,899.40	\$15,835.87	\$33,735.27	\$2,473.48

TABLE 7—Continued

STATEMENT OF RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923—Continued.

	Expenditures—		Total Expenditures Biennium	Receipts—		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Cr.
	1921-1922	1922-1923		1921-1922	1922-1923		
SEED INSPECTION:							
State appropriation				\$7,000.00	\$8,200.00	\$15,200.00	
Expenditures:							
Salaries	\$6,000.00	\$6,700.00	\$12,700.00				
Labor		300.00	300.00				
Postage and stationery	90.64	125.28	215.92				
Seeds, plants and sundries	4.16	81.10	85.26				
Chemicals and laboratory supplies	124.95	54.29	179.24				
Tools, machinery and appliances	29.59	12.78	42.37				
Furniture and fixtures	59.56	32.45	92.01				
Scientific apparatus	153.16	106.65	259.81				
Traveling expenses	532.94	470.94	1,003.88				
Association dues	5.00	5.00	10.00				
Publications		293.29	293.29				
Library		18.22	18.22				
Totals—Seed Inspection	\$7,000.00	\$8,200.00	\$15,200.00	\$7,000.00	\$8,200.00	\$15,200.00	

TABLE 7—Continued

STATEMENT OF RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923—Continued.

	Expenditures—		Receipts—		Total Receipts Biennium	Balances Sept. 30, 1923	
	1921-1922	1922-1923	1921-1922	1922-1923		Dr.	Cr.
RIDGELY FARM (Sub-Station):							
Balance October 1, 1921					\$1,760.91		
State appropriation			5,000.00	\$5,000.00	10,000.00		
Receipts from sales			234.59	330.73	565.32		
Expenditures:							
Salaries	\$2,471.27	\$1,800.00					
Labor	1,532.57	2,008.10					
Printing and publications	694.99						
Postage and stationery	107.78	37.45					
Freight and express	36.45	85.81					
Heat, light and power	14.90	6.75					
Chemicals and laboratory supplies	75.95	137.66					
Seeds, plants and sundry supplies	716.38	378.75					
Fertilizers	126.49	239.80					
Tools and machinery	58.25	279.75					
Scientific apparatus	230.39						
Traveling expenses	570.30	72.01					
Building and repairs	305.43	219.23					
Furniture and fixtures		29.00					
Insurance		68.14					
Balance September 30, 1923							\$22.63
Totals—Ridgely Farm	\$6,941.15	\$5,362.45	\$6,995.50	\$5,330.73	\$12,326.23		\$22.63

TABLE 7—Continued
STATEMENT OF RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR THE BIENNIUM
ENDED SEPTEMBER 30, 1923—Continued.

HATCH FUND:	Expenditures—		Total Expenditures Biennium	Receipts—		Total Receipts Biennium	Balances Sept. 30, 1923 Dr.	Cr.
	1921-1922	1922-1923		1921-1922	1922-1923			
Balance October 1, 1921						726.76		
U. S. appropriation				\$726.76	\$15,000.00	30,000.00		
Expenditures:								
Salaries	\$14,083.25	\$13,986.68	\$28,069.93					
Wages	713.18	68.12	781.30					
Publications	578.88		578.88					
Postage and stationery	8.14	8.91	17.05					
Heat, light and power	196.31		196.31					
Chemicals and laboratory supplies	12.77	327.02	339.79					
Furniture and fixtures		21.80	21.80					
Traveling expenses		3.18	3.18					
Seeds, plants and sundry supplies	102.78	22.67	125.45					
Library	27.88		27.88					
Tools, machinery and appliances	.60	1.43	2.03					
Scientific apparatus	36.34	232.55	268.89					
Freight and express		161.70	161.70					
Balance September 30, 1923								\$132.57
Totals—Hatch Fund	\$15,760.13	\$14,834.06	\$30,594.19	\$15,726.76	\$15,000.00	\$30,726.76		\$132.57

STATEMENT OF RECEIPTS AND EXPENDITURES—EXPERIMENT STATION FUNDS FOR THE BIENNium
ENDED SEPTEMBER 30, 1923—Continued.

162

TABLE 8

STATEMENT OF RECEIPTS AND EXPENDITURES--EXTENSION SERVICE FUNDS.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Bal. Cr. Bal.
	1921-1922	1922-1923		1921-1922	1922-1923		
GENERAL EXTENSION:							
Balance September 30, 1921.....						\$731.93	
State appropriation.....					\$15,000.00	20,000.00	
Miscellaneous receipts.....				557.02	467.73	1,024.75	
EXPENDITURES:							
Salaries.....	\$2,625.00	\$6,000.00	\$8,625.00				
Wages.....	16.45	540.00	556.45				
Publications.....	500.00	191.00	691.00				
Postage and stationery.....	443.33	1,347.16	1,790.49				
Freight and express.....	30.07	573.89	603.96				
Office supplies and miscellaneous.....	343.63	606.04	949.67				
Library.....	60.86	132.74	193.60				
Tools, machinery and appliances.....	254.28	150.86	405.14				
Furniture and fixtures.....	4.53	552.46	556.99				
Traveling expense.....	1,543.27	4,019.43	5,562.70				
Association dues.....	13.00		13.00				
Cleaning rugs.....	8.00		8.00				
Scientific apparatus.....		829.35	829.35				
Transfer to Smith Lever.....	83.26		83.26				
Notary bond and seals and commission.....							
Medals.....		15.50	15.50				
Entertainment of guests.....		73.75	73.75				
		34.00	34.00				
Totals—General Extension.	\$5,925.68	\$15,066.18	\$20,991.86	\$6,288.95	\$15,467.73	\$21,756.68	\$764.82

TABLE 8—Continued

STATEMENT OF RECEIPTS AND EXPENDITURES—EXTENSION SERVICE FUNDS—Continued.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923 Dr. Bal. Cr. Bal.
	1921-1922	1922-1923		1921-1922	1922-1923		
FEDERAL SMITH-LEVER:							
Balance September 30, 1921.....				\$11,248.02		\$11,248.02	
U. S. appropriation.....				53,381.46	\$56,287.11	109,668.57	
Transfer from General Extension.....							
				83.26		83.26	
EXPENDITURES:							
Salaries.....	\$38,562.05	\$48,490.90	\$87,052.95				
Wages.....	550.00	175.61	725.61				
Publications.....	333.40	366.55	699.95				
Postage and stationery and telephone and telegraph.....	1,204.25	944.63	2,148.88				
Freight and express.....	17.89	19.47	37.36				
Heat, light and power.....	360.00	1,000.00	1,360.00				
Seeds, plants and sundry sup- plies.....	221.55	87.36	308.91				
Library.....	22.67	3.00	25.67				
Tools, machinery and appliances.....	18.50	2.95	21.45				
Furniture and fixtures.....	894.82	165.76	1,060.58				
Scientific apparatus.....	13.85	24.49	38.34				
Traveling expenses.....	4,950.88	6,990.18	11,941.06				
Balance September 30, 1923.....							\$15,579.09
Totals—Federal Smith-Lever.....	\$47,149.86	\$58,270.90	\$105,420.76	\$64,712.74	\$56,287.11	\$120,999.85	\$15,579.09

TABLE 8—Continued
STATEMENT OF RECEIPTS AND EXPENDITURES—EXTENSION SERVICE FUNDS—Continued.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923	
	1921-1922	1922-1923		1921-1922	1922-1923		Dr. Bal.	Cr. Bal.
STATE SMITH-LEVER:								
State appropriations.....								
EXPENDITURES:								
Salaries.....	\$36,100.00	\$34,985.71	\$71,085.71					
Labor.....		214.29	214.29					
Postage and stationery, tele- graph and telephone.....	1,126.81	800.02	1,926.83					
Freight and express.....	11.88	9.97	21.85					
Seeds, plants and sundry sup- plies.....	118.64	88.40	207.04					
Library.....	19.59	6.75	26.34					
Tools, machinery and appliances	28.56	4.25	32.81					
Furniture and fixtures.....	60.56	175.19	235.75					
Scientific apparatus.....	14.80	24.13	38.93					
Traveling expenses.....	6,999.55	7,977.90	14,977.45					
Publications.....	2,000.00	2,000.00	4,000.00					
Laundry—clothing for exhibit.....		.50	.50					
Totals—State Smith-Lever.....	\$46,480.39	\$46,287.11	\$92,767.50	\$46,480.39	\$46,287.11	\$92,767.50		
SPECIAL EXTENSION:								
Balance September 30, 1921.....								
U. S. appropriation.....				\$5,087.54		\$5,087.54		
EXPENDITURES:				15,805.36	\$14,676.40	\$30,481.76		
Salaries.....	\$16,377.88	\$12,883.76	\$29,261.64					
Balance September 30, 1923.....							\$6,307.66	
Totals—Special Extension.....	\$16,377.88	\$12,883.76	\$29,261.64	\$20,892.90	\$14,676.40	\$35,569.30	\$6,307.66	

TABLE 8—Continued

STATEMENT OF RECEIPTS AND EXPENDITURES—EXTENSION SERVICE FUNDS—Continued.

	Expenditures		Total Expenditures Biennium	Receipts		Total Receipts Biennium	Balances Sept. 30, 1923	
	1921-1922	1922-1923		1921-1922	1922-1923		Dr. Bal.	Cr. Bal.
STATE HORTICULTURAL FUND:								
State appropriation				\$8,000.00	\$8,000.00	\$16,000.00		
EXPENDITURES:								
Salaries	\$4,900.00	\$4,900.00	\$9,800.00					
Postage and stationery, telegraph and telephone	464.30	218.14	682.44					
Freight and express	1.47	3.00	4.47					
Seeds, plants and sundry supplies	16.96	103.00	119.96					
Tools and appliances	2.75		2.75					
Traveling expenses	2,599.52	2,590.82	5,190.34					
Advertising	15.00		15.00					
Furniture and fixtures		176.96	176.96					
Scientific apparatus		8.08	8.08					
Totals—State Horticultural Fund	\$8,000.00	\$8,000.00	\$16,000.00	\$8,000.00	\$8,000.00	\$16,000.00		
COUNTY DEMONSTRATION:								
State appropriation				\$48,000.00	\$48,000.00	\$96,000.00		
EXPENDITURES:								
Salaries—County Agents—Men	\$23,000.00	\$23,000.00	\$46,000.00					
Salaries—“ Women	10,000.00	10,000.00	20,000.00					
Salaries—Clerical help	5,000.00	5,000.00	10,000.00					
Traveling expenses	10,000.00	10,000.00	20,000.00					
Totals—County Demonstration	\$48,000.00	\$48,000.00	\$96,000.00	\$48,000.00	\$48,000.00	\$96,000.00		
Grand Totals—Extension Service	\$171,933.81	\$188,507.95	\$360,441.76	\$194,374.98	\$188,718.25	\$383,093.33		\$22,651.57

TABLE No. 9

167

TABLE 10

STATEMENT SHOWING SOURCES OF INCOME FOR THE UNIVERSITY OF MARYLAND
(INCLUDING BALTIMORE SCHOOLS AND HOSPITALS)

FOR THE BIENNIUM ENDED SEPTEMBER 30, 1923

	From State of Maryland	From U. S. Government	From Other Sources	Total From All Sources
GENERAL UNIVERSITY—COLLEGE PARK:				
From State appropriation for maintenance	\$378,787.34			\$378,787.34
From State interest on invested funds	14,206.73			14,206.73
From U. S. Government—Morrill-Nelson Fund		\$100,000.00		100,000.00
From U. S. Government—Veterans' Bureau		50,273.14		50,273.14
From U. S. Government—Smith-Hughes—Federal		18,678.93		18,678.93
From Student fees			\$411,234.57	411,234.57
From fertilizer, lime and feed licenses			71,977.69	71,977.69
From sale of produce and miscellaneous			48,538.50	48,538.50
From State Board of Agriculture—Executive expenses	10,000.00			10,000.00
From Board of Regents Building Fund	22,891.17			22,891.17
From loans from Union Trust Company			89,870.83	89,870.83
From service funds			91,309.31	91,309.31
From loan to building fund			6,000.00	6,000.00
From State working fund—advanced	110,000.00			110,000.00
From balance October 1, 1921			35,849.45	35,849.45
Total cash received, Oct. 1, 1921 to Sept. 30, 1923	\$535,885.24	\$168,952.07	\$754,780.35	\$1,459,617.66
Less transfer to Eastern branch		\$20,000.00		
Less repayment of working fund, 1922	\$50,000.00			
Less repayment of working fund, 1923	60,000.00			
Less transfer of unused balances, 1922	112,649.21			
Less payment of loans from Union Trust Co.			90,000.00	222,649.21
Net amount available for General University	\$423,236.03	\$148,952.07	\$664,780.35	\$1,236,968.45

TABLE 10—Continued

STATEMENT SHOWING SOURCES OF INCOME FOR THE UNIVERSITY OF MARYLAND
(INCLUDING BALTIMORE SCHOOLS AND HOSPITALS)

FOR THE BIENNIUM ENDED SEPTEMBER 30, 1923

	From State of Maryland	From U. S. Government	From Other Sources	Total From All Sources
EASTERN BRANCH—PRINCESS ANNE:				
Balance, October 1, 1921.....		\$1,009.40		\$1,009.40
Transferred from Morrill-Nelson Fund.....		20,000.00		20,000.00
State appropriation.....	\$30,540.00			30,540.00
Building and equipment.....	3,228.36			3,228.36
Interest on deposits.....			\$139.27	139.27
Total Receipts—Eastern Branch.....	\$33,768.36	\$21,009.40	\$139.27	\$54,917.03
EXPERIMENT STATION:				
State Fund.....	\$105,800.00			\$105,800.00
Station Farm.....			30,907.99	30,907.99
Biological Lab.....	11,000.00			11,000.00
State appropriation.....			15,527.05	15,527.05
Sales of serum.....			7,208.22	7,208.22
Balance September 30, 1921.....				15,200.00
State appropriation.....	15,200.00			15,200.00
Ridgely Farm.....	10,000.00			10,000.00
State appropriation.....				565.32
Sales and miscellaneous.....			565.32	565.32
Balance September 30, 1921.....			1,760.91	1,760.91
U. S. appropriation.....		\$30,000.00		30,000.00
Balance September 30, 1921.....		726.76		726.76
U. S. appropriation.....		30,000.00		30,000.00
Balance September 30, 1921.....		820.84		820.84
Total—Experiment Station.....	\$142,000.00	\$61,547.60	\$55,969.49	\$259,517.09

TABLE 10—Continued

STATEMENT SHOWING SOURCES OF INCOME FOR THE UNIVERSITY OF MARYLAND
(INCLUDING BALTIMORE SCHOOLS AND HOSPITALS)
FOR THE BIENNIUM ENDED SEPTEMBER 30, 1923

	From State of Maryland	From U. S. Government	From Other Sources	Total From All Sources
EXTENSION SERVICE:				
General Extension.....	\$20,000.00	.....	.....	\$20,000.00
State appropriation.....	.....	.....	.....	.....
Miscellaneous receipts.....	.....	.....	.....	.....
Balance Sept. 30, 1921.....	.....	.....	.....	\$1,024.75
Federal Smith-Lever.....	.....	\$109,668.57	.....	731.93
U. S. appropriation.....	.....	.....	.....	.....
Trans. from Gen. Ext.....	.....	.....	83.26	109,668.57
Balance Sept. 30, 1921.....	.....	11,248.02	.....	83.26
Special Extension.....	.....	30,481.76	.....	11,248.02
U. S. appropriation.....	.....	5,087.54	.....	30,481.76
Balance Sept. 30, 1921.....	.....	.....	.....	5,087.54
State Hort. Fund.....	16,000.00	.....	.....	16,000.00
County Demonstration.....	96,000.00	.....	.....	96,000.00
State Smith-Lever.....	92,767.50	.....	.....	92,767.50
State appropriation.....	.....	.....	.....	.....
Totals—Extension Service.....	\$224,767.50	\$156,485.89	\$1,839.94	\$383,093.33
STATE DAIRYMEN'S ASSOCIATION:				
State appropriation.....	\$10,000.00	.....	.....	\$10,000.00
Grand Totals—College Park and sub stations.....	\$833,771.89	\$387,994.96	\$722,729.05	\$1,944,495.90

TABLE 10—Continued

STATEMENT SHOWING SOURCES OF INCOME FOR THE UNIVERSITY OF MARYLAND
(INCLUDING BALTIMORE SCHOOLS AND HOSPITALS)
FOR THE BIENNIIUM ENDED SEPTEMBER 30, 1923

BALTIMORE SCHOOLS:

	From State of Maryland	From U. S. Government	From Other Sources	Total From All Sources
Schools of Medicine, Dentistry, Pharmacy, Law and Commerce:				
State appropriation, maintenance and equipment.....	\$89,191.26			\$89,191.26
Transfer from C. P.....	9,771.67			9,771.67
Fees and Miscellaneous.....				
University Hospital.....	45,000.00		\$562,294.96	562,294.96
State appropriation.....				45,000.00
Private patients.....			174,417.74	174,417.74
Ward patients.....			178,320.53	178,320.53
Other sources.....			184,788.71	184,788.71
Total Baltimore Schools.....	\$143,962.93		\$1,099,821.94	\$1,243,784.87
Totals—University of Maryland—All funds.....	\$977,734.82	\$387,994.96	\$1,822,550.99	\$3,188,280.77
	.31%	.12%	.57%	

*INCOME OF STATE INSTITUTIONS OF OTHER STATES—1922-1923

Compiled from U. S. Bureau of Education Statistics.

	From State	Federal Government	Student Fees Estimated	Other Sources	Total	Mill Tax	Enrollment 1922-1923
SOUTHERN STATES:							
Alabama Polytechnic Institute.....	\$120,280.00	\$30,150.00	\$82,000.00	\$61,760.00	\$294,190.00	.....	1,354
University of Alabama.....	138,500.00	4,500.00	75,000.00	50,000.00	268,000.00	.....	1,912
University of Arkansas.....	412,566.00	36,363.00	35,000.00	25,000.00	508,929.00	1 mill	1,118
University of Florida.....	170,000.00	32,665.00	23,418.00	2,155.00	228,238.00	.....	946
Florida State College for Women.....	147,893.00	3,000.00	33,559.00	7,971.00	192,333.00	.....	755
University of Georgia.....	165,000.00	50,287.00	80,000.00	15,000.00	310,287.00	.....	1,050
Georgia School of Technology.....	112,000.00	Not Reported	.....	.....	.....	.....	1,782
University of Kentucky.....	370,000.00	42,750.00	78,400.00	177,061.00	668,211.00	1 3/4	1,522
Miss. Agrl. and Mech. College.....	239,493.00	22,800.00	10,000.00	225,000.00	497,293.00	.....	1,121
Miss. State College for Women.....	171,390.00	2,300.00	13,650.00	14,950.00	202,290.00	.....	1,076
University of Mississippi.....	152,608.00	.....	6,500.00	.....	159,108.00	.....	681
University of North Carolina.....	447,250.00	.....	214,000.00	75,000.00	736,250.00	.....	1,866
N. Carolina Col. Ag. and Mech. Arts.....	275,000.00	41,000.00	95,426.00	90,086.00	501,512.00	.....	842
Oklahoma College for Women.....	118,750.00	.....	2,000.00	500.00	121,250.00	.....	385
University of Oklahoma.....	702,952.00	146,300.00	70,000.00	30,000.00	949,252.00	.....	3,395
Medical College of South Carolina.....	176,145.00	.....	20,000.00	2,000.00	178,145.00	.....	251
Clemson Agricultural College.....	306,077.00	25,000.00	20,000.00	32,266.00	383,343.00	.....	812
South Carolina State University.....	206,204.00	.....	.....	3,600.00	209,804.00	.....	685
University of Tennessee.....	422,009.00	170,226.00	100,655.00	28,620.00	721,510.00	1/2	1,582
University of Texas.....	1,330,616.00	.....	150,000.00	.....	1,480,616.00	.....	4,604
Texas State Agrl. and Mech. College..	689,810.00	37,500.00	44,000.00	397,000.00	1,168,310.00	.....	1,813
Virginia Polytechnic Institute.....	222,275.00	63,992.00	19,550.00	1,100.00	306,917.00	.....	892
University of West Virginia.....	650,000.00	57,000.00	64,000.00	.....	771,000.00	.....	1,911
UNIVERSITY OF MARYLAND:							
(Including professional schools at Balto.)	249,695	40,000.00	305,340.00	127,787.00	722,822.00	.....	2,436

*Excluding the following sources of income: From students for board and room, and for athletics and other student activities, building and permanent improvements, Extension, Experiment Station and Research work.

*INCOME OF STATE INSTITUTIONS OF OTHER STATES—1922-1923.—Continued.

Compiled from U. S. Bureau of Education Statistics.

NEW ENGLAND STATES:

	From State	Federal Government	Student Fees Estimated	Other Sources	Total	Mill Tax	Enrollment 1922-1923
Connecticut Agrl. College	\$188,892.00	\$63,642.00	\$45,000.00	\$90,210.00	\$387,744.00	.....	390
University of Maine	225,000.00	55,915.00	163,674.00	80,241.00	524,830.00	.....	1,267
Mass. Agricultural College	638,895.00	33,333.00	.....	.....	672,228.00	.....	484
New Hampshire Agr. College	274,581.00	54,800.00	76,000.00	96,137.00	501,518.00	.....	1,054
Rhode Island State College	100,000.00	52,500.00	7,000.00	15,000.00	174,500.00	.....	360
University of Vermont	61,900.00	66,130.00	174,000.00	107,630.00	409,660.00	.....	1,140

UNIVERSITY OF MARYLAND:

(Including professional schools at Balto.)	249,695	40,000.00	305,340.00	127,787.00	722,822.00	2,436
--	---------	-----------	------------	------------	------------	-------	-------

MIDDLE ATLANTIC STATES:

Rutgers College	\$361,900.00	\$55,800.00	\$158,150.00	\$78,426.00	\$654,276.00	.....	1,178
N. Y. State College of Forestry	193,700.00	.....	14,000.00	.....	207,700.00	.....	326
Pennsylvania State College	808,000.00	50,000.00	268,000.00	129,000.00	1,255,000.00	.....	3,072
University of Pennsylvania	Not Reported	.....	.....	.....	.....	.....	.....

UNIVERSITY OF MARYLAND:

(Including professional schools at Balto.)	249,695	40,000.00	305,340.00	127,787.00	722,822.00	2,436
--	---------	-----------	------------	------------	------------	-------	-------

Excluding income as follows: From students for board and room, athletics and other student activities, income for buildings and permanent improvements, Extension, Experiment Station and other research work.

*INCOME OF STATE INSTITUTIONS OF OTHER STATES—1922-1923.—Continued.

Compiled from U. S. Bureau of Education Statistics.

		From State	Federal Government	Student Fees Estimated	Other Sources	Total	Mill Tax	Enrollment 1922-1923
MIDDLE WESTERN STATES:								
University of Illinois		\$3,680,000.00	\$127,450.00	\$600,000.00	\$45,000.00	\$4,452,450.00	2/3	9,244
Indiana University		1,115,000.00		258,000.00	49,793.00	1,422,793.00	.2	2,880
Purdue University		1,100,000.00	67,000.00	180,000.00	52,500.00	1,399,500.00	.2½	2,943
Iowa State College		1,156,500.00	138,000.00	200,000.00		1,494,500.00		3,504
State University of Iowa		1,916,979.00		429,730.00		2,346,709.00		5,160
University of Kansas		954,000.00	2,000.00	135,000.00	86,000.00	1,177,000.00		3,694
Kansas State Agrl. College		838,000.00	50,000.00	205,000.00	325,000.00	1,418,000.00		2,579
Michigan Agricultural College		1,085,000.00	308,000.00	168,000.00	170,000.00	1,731,000.00	1/5	1,637
University of Michigan		3,000,000.00	38,416.00	899,800.00	803,200.00	4,741,416.00	6/10	8,760
University of Nebraska		1,406,592.00	50,000.00	250,000.00	1,259,669.00	2,966,261.00		5,345
North Dakota State College of Agrl.		162,000.00	137,000.00	25,000.00		324,000.00		568
University of North Dakota		472,038.00	52,000.00	32,000.00	6,000.00	562,038.00		1,281
Ohio State University		1,956,724.00	95,000.00	400,000.00		2,451,724.00		8,000
Miami University (Ohio)		283,397.00	4,975.00	65,025.00	6,500.00	359,897.00		1,429
University of South Dakota		283,000.00		20,000.00	15,000.00	318,000.00		855
UNIVERSITY OF MARYLAND:								
(Including professional schools at Balto.)		249,695	40,000.00	305,340.00	127,787.00	722,822.00		2,436

*Excluding income from the following sources: From students for board and room, athletics and other student activities for building and permanent improvements, Extension, Experiment Station and Research work.

*INCOME OF STATE INSTITUTIONS OF OTHER STATES—1922-1923.—Continued.

Compiled from U. S. Bureau of Education Statistics.

	From State	Federal Government	Student Fees Estimated	Other Sources	Total	Mill Tax	Enrollment 1922-1923
WESTERN STATES:							
University of Colorado	\$638,000.00		\$304,434.00	\$33,500.00	\$975,934.00	.4277	2,632
Colorado Agricultural College	315,490.00	70,000.00	20,000.00	85,224.00	490,714.00	.37143	901
University of Idaho	Not Reported	50,000.00	4,000.00	20,000.00			1,232
Montana Col. of Agr. and Mech. Arts.	205,244.00	55,210.00	11,104.00	60,000.00	331,558.00	1 1/2	640
University of Montana	365,000.00	20,000.00	30,000.00	35,000.00	450,000.00		1,310
University of Nevada	175,000.00	50,000.00	21,000.00	15,000.00	261,000.00	1.3	727
University of New Mexico	92,500.00		9,000.00	35,000.00	136,500.00		285
New Mexico College of Agr.	70,000.00	50,000.00	6,000.00	37,500.00	163,500.00		173
University of Utah	553,729.00		128,000.00	13,000.00	494,729.00		2,293
State College of Washington	Not Reported		205,000.00	25,000.00	1,460,215.00	.67	1,876
University of Washington	1,230,215.00		6,500.00	25,500.00	343,723.00	1.10	4,897
University of Wyoming	261,723.00	50,000.00				1/2	575
UNIVERSITY OF MARYLAND:							
(Including professional schools at Balto.)	249,695	40,000.00	305,340.00	127,787.00	722,822.00		2,436.

*Excluding income as follows: From students for room and board, athletics and other student activities, building and permanent improvements, Extension, Experiment Station and research work.

TABLE 12

AVERAGE SALARIES—ADMINISTRATIVE OFFICERS AND ASSISTANTS—1921-1922

Compiled from Figures Submitted by Fifty-eight State Universities and State Colleges

<i>Position.</i>	General Average	Avg. at U. of M. College Park Only	New England States	Middle Atlantic States	Southern States	Middle Western States	Western States
PRESIDENT'S OFFICE:							
President	\$9,447.00	\$10,000.00	\$7,250.00	\$12,000.00	\$8,142.00	\$11,093.00	\$9,640.00
Assistant to President	4,623.00	**7,500.00	.....	.....	4,871.00	4,240.00	4,800.00
Executive Secretary	2,172.00	2,700.00	2,330.00	2,000.00	2,107.00	1,827.00	2,604.00
Other assistants	2,320.00	1,500.00	2,164.00	2,066.00	1,568.00	2,536.00	2,810.00
BUSINESS OFFICE:							
Head of business office	4,212.00	***3,500.00	3,800.00	6,000.00	3,645.00	4,704.00	4,115.00
Treasurer	3,164.00	.....	3,500.00	3,333.00	3,138.00	3,750.00	2,233.00
Other assistants	9,920.00	8,100.00	9,725.00	11,568.00	5,731.00	11,533.00	13,769.00
REGISTRAR'S OFFICE:							
Registrar	2,966.00	3,000.00	2,675.00	3,400.00	2,743.00	3,115.00	3,161.00
Assistant Registrar	1,739.00	2,000.00	2,070.00	2,300.00	1,512.00	2,004.00	1,607.00
Other assistants	5,329.00	1,200.00	7,452.00	3,903.00	2,995.00	6,442.00	6,592.00
LIBRARY:							
Librarian	2,827.00	2,000.00	2,060.00	3,333.00	2,503.00	3,400.00	2,856.00
Assistant Librarian	1,878.00	1,020.00	1,272.00	3,400.00	1,637.00	2,115.00	2,073.00
Other assistants	8,215.00	700.00	4,310.00	12,260.00	4,766.00	15,293.00	6,896.00

*Includes \$2,500 salary as Executive Officer, State Board of Agriculture.

**Includes \$2,500 salary as Director of Athletics.

***The President of the Board of Regents is also Treasurer of the University.

Finances are handled through the College Park office under the direction of the Financial Secretary.

AVERAGE SALARIES IN STATE INSTITUTIONS OF OTHER STATES—1922-1923

Compiled from U. S. Bureau of Education Statistics

	President	House, Etc., in Addition	Deans	Professors	Associate Professors	Assistant Professors	Instructors
SOUTHERN STATES:							
Alabama Polytechnic Institute	\$6,000.00	\$1,200.00	\$4,000.00	\$2,840.00	\$2,350.00	\$2,100.00	\$1,600.00
University of Alabama	8,400.00	1,600.00	4,500.00	3,600.00	3,000.00	2,400.00	1,800.00
University of Arkansas	7,000.00		4,750.00	3,450.00	2,950.00	2,500.00	2,000.00
University of Florida	5,000.00		3,500.00	3,400.00	3,000.00	2,500.00	1,800.00
Florida State College for Women	5,000.00		3,500.00	3,200.00	2,500.00	2,200.00	1,700.00
University of Georgia	6,000.00	1,000.00	5,000.00	3,600.00	2,600.00	2,200.00	1,700.00
Georgia School of Technology	6,000.00	1,500.00	3,600.00	3,300.00	2,700.00	2,200.00	1,600.00
University of Kentucky	12,000.00	1,300.00	5,125.00	3,090.00	2,460.00	2,290.00	1,645.00
Mississippi Agriculture and Mechanic College	6,000.00	300.00	3,680.00	3,450.00	2,300.00	2,075.00	1,875.00
Mississippi State College for Women	4,800.00	600.00	3,300.00	3,000.00		1,800.00	1,500.00
University of Mississippi	4,800.00	850.00	3,600.00	3,600.00	2,750.00	2,250.00	1,500.00
University of North Carolina	8,500.00	1,500.00	4,750.00	4,500.00	3,600.00	2,750.00	2,000.00
North Carolina College of Agricultural and Mechanical Arts	6,000.00		3,650.00	3,600.00	2,750.00	1,800.00	1,600.00
Oklahoma College for Women	5,000.00	1,000.00	3,000.00	3,000.00	2,250.00	2,000.00	1,800.00
University of Oklahoma	10,000.00	1,200.00	6,000.00	4,200.00	3,400.00	2,600.00	2,000.00
Medical College of South Carolina	Not Given		4,000.00	3,000.00		2,500.00	2,000.00
Clemson Agricultural College	6,000.00		3,650.00	2,808.00	2,288.00	2,035.00	1,625.00
University of South Carolina	5,000.00	900.00	3,500.00	2,800.00	2,250.00		
University of Tennessee	7,500.00	900.00	3,500.00	3,517.00	3,080.00	2,300.00	1,738.00
University of Texas	7,500.00	1,500.00	4,300.00	4,000.00	3,200.00	2,600.00	2,000.00
Texas State Agriculture and Mechanic College	7,500.00	1,200.00	4,500.00	3,379.00	2,509.00	2,125.00	1,747.00
Virginia Polytechnic Institute	7,500.00	500.00	4,000.00	3,500.00	2,600.00	2,200.00	1,500.00
West Virginia University	9,000.00	2,000.00	5,200.00	3,900.00	3,000.00	2,400.00	1,800.00
University of Maryland							
Present average	7,500.00*	None	3,500.00	3,373.00	2,777.00	2,448.00	1,870.00
Proposed average	Same	None	5,385.00	3,828.00	3,174.00	2,460.00	1,942.00

*Salary as Executive Officer, State Board of Agriculture, \$2,500; total salary, \$10,000.

AVERAGE SALARIES IN STATE INSTITUTIONS OF OTHER STATES—1922-1923.—Continued

Compiled from U. S. Bureau of Education Statistics

NEW ENGLAND STATES:

	President	House, Etc., in Addition	Deans	Professors	Associate Professors	Assistant Professors	Instructors
Connecticut Agriculture College	Not Given		\$4,250.00	\$3,800.00	\$3,250.00	\$2,800.00	\$2,000.00
University of Maine	\$6,000.00	\$750.00	\$4,400.00	3,404.00	2,631.00	2,106.00	1,625.00
Massachusetts Agriculture College	7,500.00	1,500.00	5,000.00	3,643.00	.....	2,523.00	1,713.00
New Hampshire Agriculture College	7,500.00	1,100.00	3,675.00	3,626.00	2,944.00	2,522.00	1,880.00
Rhode Island State College	5,000.00	1,000.00	3,500.00	3,000.00	.....	2,500.00	1,800.00
University of Vermont	10,000.00	.....	4,000.00	3,400.00	2,800.00	2,200.00	1,800.00
University of Maryland	7,500.00*	None	3,500.00	3,373.00	2,777.00	2,448.00	1,870.00
Present average	Same	None	5,385.00	3,828.00	3,174.00	2,460.00	1,942.00
Proposed average							

*Salary as Executive Officer, State Board of Agriculture, \$2,500; total salary, \$10,000.

MIDDLE ATLANTIC STATES:

Rutgers College	\$8,000.00	\$1,200.00	Not Given	\$3,500.00	\$2,800.00	\$2,200.00	\$1,850.00
New York State College of Forestry (Dean)	6,000.00	.....	.....	3,750.00	.....	2,500.00	1,900.00
Pennsylvania State College	12,000.00	1,500.00	\$6,600.00	3,220.00	2,680.00	2,370.00	1,880.00
University of Pennsylvania	(Not Reported)						
University of Maryland	7,500.00*	None	3,500.00	3,373.00	2,777.00	2,448.00	1,870.00
Present average	Same	None	5,385.00	3,828.00	3,174.00	2,460.00	1,942.00
Proposed average							

*Salary as Executive Officer, State Board of Agriculture, \$2,500; total salary, \$10,000.

AVERAGE SALARIES IN STATE INSTITUTIONS OF OTHER STATES—1922-1923.—Continued

Compiled from U. S. Bureau of Education Statistics

MIDDLE WESTERN STATES:

	President	House, Etc., in Addition	Deans	Professors	Associate Professors	Assistant Professors	Instructors
University of Illinois	\$15,000.00	\$1,500.00	\$7,000.00	\$4,906.00	\$3,785.00	\$2,985.00	\$1,884.00
Indiana University	Not Given		4,600.00	4,000.00	2,850.00	2,350.00	1,850.00
Purdue University	10,000.00		5,375.00	3,600.00	2,850.00	2,400.00	1,900.00
Iowa State College	12,000.00	And House	4,785.00	4,264.00	2,959.00	2,439.00	1,825.00
State University of Iowa	12,000.00	And House	5,671.00	4,395.00	3,410.00	2,769.00	1,856.00
University of Kansas	10,000.00	2,000.00	4,750.00	3,496.00	2,577.00	2,193.00	1,688.00
Kansas State Agriculture College	10,000.00		4,700.00	3,500.00	2,500.00	2,100.00	1,750.00
University of Michigan	18,000.00	And House	5,550.00	5,240.00	3,776.00	2,918.00	1,961.00
Michigan Agriculture College	12,000.00	1,200.00	5,400.00	4,775.00	3,373.00	2,582.00	2,034.00
University of Nebraska	8,400.00	1,200.00	4,983.00	3,774.00	2,871.00	2,543.00	1,834.00
North Dakota State College of Agriculture	7,000.00		3,800.00	3,000.00	2,725.00	2,300.00	1,825.00
University of North Dakota	7,500.00	1,500.00	4,600.00	3,528.00	2,677.00	2,477.00	1,955.00
Ohio State University	10,000.00	1,000.00	6,000.00	4,200.00	3,000.00	2,750.00	1,900.00
Miami University	7,500.00	1,000.00	5,000.00	3,372.00	2,763.00	2,083.00	1,585.00
University of South Dakota	7,500.00		4,400.00	3,300.00	2,800.00	2,000.00	1,500.00
University of Maryland							
Present average	7,500.00*	None	3,500.00	3,373.00	2,777.00	2,448.00	1,870.00
Proposed average	Same	None	5,385.00	3,828.00	3,174.00	2,460.00	1,942.00

*Salary as Executive Officer, State Board of Agriculture, \$2,500; total salary, \$10,000.

AVERAGE SALARIES IN STATE INSTITUTIONS OF OTHER STATES—1922-1923.—Continued

Compiled from U. S. Bureau of Education Statistics

WESTERN STATES:

	President	House, Etc., in Addition	Deans	Professors	Associate Professors	Assistant Professors	Instructors
University of Colorado	\$7,500.00	\$2,000.00	\$4,042.00	\$3,322.00	\$2,783.00	\$2,261.00	\$1,616.00
Colorado Agriculture College	7,500.00	1,000.00	3,900.00	3,250.00	2,750.00	2,100.00	1,850.00
University of Idaho	7,500.00		4,100.00	3,100.00	2,600.00	2,100.00	1,800.00
Montana College of Agriculture and Mechanic.							
Arts	6,500.00		4,100.00	3,600.00	2,550.00	2,500.00	2,000.00
University of Montana	6,000.00	600.00	3,672.00	3,270.00	3,160.00	2,691.00	2,083.00
University of Nevada	12,000.00	1,500.00	4,150.00	3,570.00	2,975.00	2,440.00	2,000.00
University of New Mexico	6,000.00		2,945.00	2,700.00	2,500.00	2,400.00	1,725.00
New Mexico College of Agriculture	6,000.00	600.00	3,000.00	2,250.00	2,040.00	2,400.00	1,800.00
University of Utah	7,500.00		4,250.00	3,500.00	2,700.00	2,400.00	1,650.00
State College of Washington	10,000.00	1,500.00	4,071.00	3,118.00	2,330.00	2,310.00	1,748.00
University of Washington	12,000.00	1,200.00	4,485.00	3,859.00	3,021.00	2,554.00	1,826.00
University of Wyoming	7,000.00	1,200.00	3,600.00	3,060.00	2,700.00	2,340.00	1,900.00
University of Maryland							
Present average	7,500.00*	None	3,500.00	3,373.00	2,777.00	2,448.00	1,870.00
Proposed average	7,500.00	None	5,385.00	3,828.00	3,174.00	2,460.00	1,942.00

*Salary as Executive Officer, State Board of Agriculture, \$2,500; total salary, \$10,000.

Financial Report

BALTIMORE SCHOOLS

To the President of the University:

Sir: In connection with the financial statement of the Baltimore schools for the biennium ended September 30, 1923, I feel that attention should be called to certain changes and improvements made within the period.

Previous to October 1, 1922, the schools here were occupying four buildings—Medical, Law, Dental and the Gray Laboratory. Each building was heated separately, with a total of seven furnaces, all burning anthracite coal. During 1922 another building adjacent hereto was acquired to take care of Dental and Pharmacy students, making a total of five buildings. All of these buildings are now heated from a single plant, burning bituminous coal, and a considerable saving in fuel alone thereby effected. The fire risk is also greatly reduced.

Considerable progress has been made in the methods of registering students and collection of fees. These features will be further improved.

After the fire in the Medical Building in February, 1922, the whole interior was greatly improved, consisting of new flooring, all old antique seats replaced with modern tablet arm-chairs, better lighting arrangement and a ventilating system installed. All of these improvements were made without increasing the indebtedness of the Medical School.

During the year 1922 the German Evangelical Church property, adjoining the Dental Building, was purchased for \$25,000 in fee. The interior was practically remodeled into three large laboratories and a like number of lecture-rooms. Lavatories for both men and women students were installed and two preparation-rooms provided. The acquisition of this building has enabled us to enroll a great many more Dental and Pharmacy students, and these additional receipts are being used to pay for the property and the improvements. 606 West Lombard Street was also purchased at \$7,800.

In June, 1922, the building located at the corner of Calvert and Saratoga Streets (P & S Building), adjoining the Mercy Hospital, was turned over to the Sisters of Mercy under contract of sale. This transaction means a saving of approximately \$6,000 per annum to the Medical School in operating expenses alone and in addition relieves

the same school of the payment of \$6,000 per annum for Interest and Sinking Fund account of a bond issue placed several years ago.

In conclusion, I wish to say that every possible effort is being made to not only hold down expenses to a minimum, but to reduce them and at the same time increase our receipts. Everything possible for the welfare of students is being done and, while far from ideal, conditions generally in the Baltimore schools have been greatly improved during the period in review.

GEO. S. SMARDON, *Comptroller*.

UNIVERSITY OF MARYLAND

BALTIMORE SCHOOLS

Cash Balance—September 30th, 1923

Balance, School of Law.....	\$35,459.40
Balance, School of Dentistry	9,563.90
Balance, School of Pharmacy.....	5,044.03

Total credit balance\$50,067.33

Less overdraft:

School of Medicine	\$9,858.18
School of Commerce	2,564.57—\$12,422.75

Net credit balance\$37,644.58

NOTE: The balance shown above represents \$41,922.16 student fees paid in September account of the 1923-24 session; \$6,610.30 of this amount was used account of payroll expense in the month of September, 1923.

UNIVERSITY OF MARYLAND
BALTIMORE SCHOOLS
SUMMARY OF RECEIPTS AND EXPENDITURES

Biennium Ended September 30th, 1923

Net cash expenditures.....	\$865,344.03	
Net cash receipts		\$896,429.89
Balance, October 1, 1921		18,038.36
Accounts receivable, students		515.00
Accounts receivable, Federal Board		2,300.00
Accounts receivable, hospital		1,700.00
Unpaid bills, September 30, 1923	5,220.26	
Loans—Union Trust Company—		
School of Medicine	37,000.00	
School of Dentistry	16,000.00	
School of Pharmacy	7,000.00	
School of Commerce.....	3,000.00	
Outstanding mortgages—		
Commonwealth Bank	15,000.00	
Calvert Bank.....	15,000.00	
	<hr/>	<hr/>
	\$963,564.29	\$918,983.25
Deficit, September 30, 1923		44,581.04
	<hr/>	<hr/>
	\$963,564.29	\$963,564.29

NOTE: During the past year \$10,660 was transferred from College Park funds to the School of Medicine for maintenance; \$888.33 of this was not received until October of this year from the Comptroller.

Twenty thousand dollars in loans was necessary in order to purchase additional facilities for the Dental and Pharmacy Schools. This will be liquidated in five years from fees received on account of additional students which can be enrolled.

Forty-three thousand dollars in loans represents funds necessary for maintenance in advance of the receipt of fees in the Schools of Medicine, Dentistry and Commerce. Student fees are received in October and February, but are not sufficient to maintain the Schools during the whole year. The income from the Medical School is gradually reducing this item, which was \$50,000 two years ago. This was expended originally for property needed by the University before it was taken over by the State.

BALTIMORE SCHOOLS

"RECEIPTS"

BIENNIUM ENDED SEPTEMBER 30, 1923

	Medicine	Dental	Pharmacy	Law	Commerce	Total
State appropriation	\$89,891.26	\$3,150.00	\$3,150.00			\$89,191.26
Trf. by College Park	9,771.67					9,771.67
Student fees	172,620.81	99,012.73	43,752.89	\$103,964.12	\$50,103.10	469,453.65
Sale of P. and S. building	22,500.00					22,500.00
Balto. City (a/c obstetrics)	12,716.00					12,716.00
Rent of dwellings	1,600.00					1,600.00
Rent of P. and S. building	665.00					665.00
Donation a/c fire damage	3,000.00					3,000.00
Donation to obstetrics	2,194.79					2,194.79
Loss of microscope equipment	38.25					38.25
Interest on deposits	7.50	109.19	33.90	372.03	13.93	736.55
Discount—Vou. payable	365.77	146.28	29.08	.88	2.14	544.15
Student fees—(B. C. D. S.)		3,950.00				3,950.00
Infirmary (Dental)		26,646.90				26,646.90
Infirmary (B. C. D. S.)		2,245.00				2,245.00
University fees					687.75	687.75
Breakage fees	1,414.92					1,414.92
Registration fees	1,237.00	709.00	534.00	1,017.00	453.00	3,950.00
Special courses	525.00	400.00				925.00
Re-examination fees	325.00					325.00
Duplicate diplomas	140.50	10.00	11.50	1,650.00	280.00	162.00
Diploma fees			720.00			2,650.00
Practical anatomy	1,680.00					1,680.00
Library fund	87.65				177.58	265.23
Research fund	50.00					50.00
Sinking fund credit (law)				757.26		757.26
Sale of books					651.75	651.75
Account fire loss	1,842.95				385.25	2,228.20
Sundries	101.44	110.82	30.24	11.06	4.00	257.56
Net receipts	\$315,775.51	\$136,489.92	\$48,261.61	\$107,972.35	\$52,758.50	\$661,257.89
Loans	143,796.43	53,671.75	22,531.82		12,300.00	232,300.00
University Hospital, account loan	2,500.00					2,500.00
Deposits on skeletons	372.00					372.00
Total receipts	\$462,443.94	\$190,161.67	\$70,793.43	\$107,972.35	\$65,058.50	\$896,429.89

UNIVERSITY OF MARYLAND
BALTIMORE SCHOOLS—Continued
"EXPENSES"
BIENNIUM ENDED SEPTEMBER 30, 1923

	Medicine	Dental	Pharmacy	La.v	Commerce	Total
Salaries and wages.....	\$146,910.98	\$66,407.84	\$23,398.66	\$63,221.47	\$43,584.50	\$343,532.45
Interest and sinking fund.....	34,400.00			375.00		34,775.00
Interest on bank loans.....	2,569.59				252.80	4,342.79
Interest on mortgage notes.....		1,058.08	462.32			1,200.00
Lab. apparatus and supplies.....	24,037.16	780.00	420.00			31,088.95
Clinical supplies (dental).....		2,694.80	4,356.99			17,025.46
Improvements and renewals.....	5,149.91	17,025.46				30,406.83
Repairs to property.....	2,035.11	15,670.59	7,559.22	2,027.11		5,465.10
Repairs to dwellings.....	348.39	2,395.55	525.04	509.40		348.39
Repairs to microscopes.....	1,100.68					1,447.32
New equipment.....	8,574.68	128.86	217.78			15,344.88
Furniture and fixtures.....	98.58	3,686.51	3,083.69			1,519.08
Central office.....	6,161.11	332.68	382.08	185.77	519.97	29,335.06
Library—General.....	1,637.82	4,399.76	2,340.57	14,662.69	1,770.93	7,067.01
Library—Books and journals.....	366.05	902.96	547.01	3,662.27	316.95	822.61
Obstetrics.....	10,813.42		194.41	262.15		10,813.42
Department of Medicine.....	1,149.86					1,149.86
Children's Clinic (Medical).....	750.74					750.74
Children's Clinic (Dental).....		1,868.49				1,868.49
Social Service.....	4,204.32					4,204.32
Account P. & S. Building.....	29,355.74					29,355.74
Publication.....	1,223.95	878.87	230.12	221.38	3,473.29	6,027.61
Printing.....	4,039.24	962.18	337.32	274.43	3,087.98	8,751.15
Multigraphing.....					1,120.22	1,120.22
Examinations.....				2,240.77		2,240.77
Postage.....	963.45	244.67	140.00	99.78	1,474.83	2,922.73
Office supplies and expenses.....	680.68	342.83	166.53	217.02	442.23	1,849.29
General and janitor supplies.....	285.61	531.11	48.46	124.13	18.03	1,007.34
Ground rents.....	2,020.50					2,020.50
Water rent.....	497.07	77.25	6.09	88.32		668.73
Taxes, dwellings and bonds.....	567.88					567.88
Insurance.....	646.49	267.13	50.26	170.25	1.08	1,135.21
Heat and light.....	2,114.26	1,526.37	685.09	1,267.99	404.61	5,998.32
Telephone.....	607.53	316.14	309.58	520.40	308.23	2,061.88
Hauling.....	231.25	125.39	47.65	233.75	80.39	718.43
Forward.....	\$293,592.05	\$122,623.52	\$45,508.87	\$90,364.08	\$56,856.01	\$608,914.56

"EXPENSES"—Continued

	Medicine	Dental	Pharmacy	Law	Commerce	Total
Brought forward	\$293,592.05	\$122,623.52	\$45,508.87	\$90,354.08	\$56,856.04	\$608,944.56
Traveling	269.59	569.20	280.91	157.06	241.76	1,618.52
Comm. and entertainment	1,054.44	733.56	730.14	1,759.90	463.42	4,741.46
Association dues	113.00	407.50	50.00	.....	.....	570.50
Account fire damage	919.93	.....	.....	.....	.....	919.93
Miscellaneous	689.02	454.63	238.60	364.51	294.44	2,041.20
Baltimore College Dental Surgery .....	.....	2,999.32	.....	.....	.....	2,999.32
Rent of lecture rooms .....	.....	.....	.....	.....	2,206.41	2,206.41
Net expenses	\$296,638.03	\$127,787.73	\$46,908.52	\$92,645.55	\$60,062.07	\$624,041.90
Payment account Nurses' Home	\$13,425.00	.....	.....	.....	.....	13,425.00
Payment of loans	129,796.43	47,671.75	15,531.82	.....	9,300.00	202,300.00
Purchase of property	7,987.13	6,750.00	3,250.00	.....	.....	17,987.13
Loan—University Hospital	4,200.00	.....	.....	.....	.....	4,200.00
Skeleton deposits returned	390.00	.....	.....	.....	.....	390.00
Donation of Law School acct. fire damage .....	.....	.....	.....	3,000.00	.....	3,000.00
Total	\$452,436.59	\$182,209.48	\$65,690.34	\$95,645.55	\$69,362.07	\$865,344.03

STATEMENT OF RESOURCES AND LIABILITIES OF THE UNIVERSITY HOSPITAL

ASSETS:

Cash balance	\$ 1,651.69
Petty cash	200.00
Accounts receivable	14,433.14
City of Baltimore	1,983.00
British consul	311.00

\$18,578.83

LIABILITIES:

Accounts payable	\$21,171.14
Loans payable	50,000.00
Equipment notes	1,830.00

\$73,001.14

Deficit.....

\$54,422.31

FINANCIAL STATEMENT—UNIVERSITY HOSPITAL

	Biennial		Total Two Years
	10/1/21 9/30/22	10/1/22 9/30/23	
RECEIPTS:			
State of Maryland	\$ 22,500.00	\$ 22,500.00	\$ 45,000.00
Private patients	86,654.10	87,763.64	174,417.74
Wards	84,143.39	94,177.14	178,320.53
Operating room	16,877.75	19,934.69	36,812.44
X-Rays diagnostic	18,696.71	20,279.72	38,976.43
X-Rays therapeutic		425.48	425.48
Accident room	3,994.34	4,747.20	8,741.54
Dispensary	3,110.31	3,895.06	7,005.37
Laboratory	5,886.45	6,584.50	12,470.95
Nurses board	14,423.70	14,594.00	29,017.70
Anaesthetic	3,362.00	2,526.00	5,888.00
Drugs, medicines	4,395.02	4,641.98	9,037.00
Electric fans	187.00	181.25	368.25
Medical, surgical supplies.....	4,461.15	2,276.68	6,737.83
Telephone, telegrams	1,243.62	1,199.03	2,442.65
Commissions and discounts earned	2,125.16	3,301.26	5,426.42
Cots and meals	160.00	590.93	750.93
Laundry	77.29	14.90	92.19
Miscellaneous	2,357.98	1,517.34	3,875.32
Total hospital receipts.....	\$274,655.97	\$291,150.80	\$565,806.77
Donations	6,435.91	10,284.30	16,720.21
	\$281,091.88	\$301,435.10	\$582,526.98
Transfer of funds		18,874.21	18,874.21
Loans	40,000.00	100,000.00	140,000.00
Appropriation bond issue	10,000.00		10,000.00
Total receipts	\$331,091.88	\$420,309.31	\$751,401.19

NOTE: During the past year \$18,874.21 was transferred from College Park funds to the University Hospital for maintenance.

Ten thousand dollars was received the year previous from bond issue for the installation of an ice machine and refrigerating plant.

Forty thousand dollars in loans represents funds necessary for actual maintenance. It is absolutely impossible to operate the hospital with the daily receipts and the small appropriation of \$22,500 from the State. The loss on State and city patients is \$40,000 a year.

Ten thousand dollars in loans represents funds necessary to purchase urgently needed equipment and for improvements in the X-Ray Department. It is planned to liquidate this indebtedness in four years from the increased X-Ray receipts and from funds now being collected by the Medical Alumni.

FINANCIAL STATEMENT—UNIVERSITY HOSPITAL

EXPENSES:	Biennial		Total Two Years
	10/1/21 9/30/22	10/1/22 9/30/23	
Salaries and wages	\$134,596.81	\$150,573.70	\$285,170.51
<i>Foods—</i>			
Butter and eggs	9,288.18	7,928.76	17,216.94
Milk and cream	9,788.99	12,390.25	22,179.24
Poultry, meat and fish	18,932.49	17,610.37	36,542.86
Fruits and vegetables	8,222.92	8,132.04	16,354.96
Groceries and provisions	16,554.92	18,074.20	34,629.12
	\$197,384.31	\$214,709.32	\$412,093.63
<i>Miscellaneous—</i>			
Ice	\$ 2,537.05		\$ 2,537.05
Coal hospital	12,532.49	\$ 16,361.10	28,893.59
Gas and electricity	4,454.81	1,862.73	6,317.54
Dry goods and notions.....	4,164.63	5,833.38	9,998.01
Drugs and medicines	5,121.27	6,502.21	11,623.48
Medical and surgical supplies.....	18,228.14	23,812.98	42,041.12
Household supplies	5,478.03	6,795.39	12,273.42
Laundry supplies	1,559.93	2,310.31	3,870.24
Laboratory supplies	1,102.26	1,482.07	2,584.33
Office expense	427.03	124.22	551.25
Stationery, postage	2,057.05	2,687.82	4,744.87
Telephone, telegrams	1,872.66	2,208.54	4,081.20
Collections and legal fees.....	405.14	170.85	575.99
Maintenance	8,001.51	10,674.03	18,675.54
Repairs to instruments		901.04	901.04
Freight, exp. hauling and carfa.	888.48	833.07	1,721.55
Water rent	327.50	824.55	1,152.05
Interest on loans and notes.....	1,076.74	2,471.42	3,548.16
Training school	1,160.88	676.87	1,837.75
Discounts and refunds	3,955.07	2,267.93	6,223.00
Nurses' Home	671.03	5,976.45	6,647.48
Miscellaneous	837.49	1,121.78	1,959.27
X-Ray supplies	3,202.79	3,294.88	6,497.67
	\$277,446.29	\$313,902.94	\$591,349.23
New building	602.53	4,890.06	5,492.59
Refrigerating plant	12,212.95		12,212.95
New equipment	8,361.17	9,486.86	17,848.03
X-Ray therapeutic		11,144.46	11,144.46
Repairs and renewals		2,993.90	2,993.90
	\$298,622.94	\$342,418.22	\$641,041.16
Paid loans	13,000.00	90,000.00	103,000.00
	\$311,622.94	\$432,418.22	\$744,041.16
Total expenses	\$311,622.94	\$432,418.22	\$744,041.16
Total receipts	331,091.88	420,309.31	751,401.19
	\$ 19,468.94	*\$12,108.91	\$ 7,360.03

* Deficit.

LIVE STOCK SANITARY SERVICE
STATE BOARD OF AGRICULTURE

Receipts and Expenditures

	1921-22	1922-23	Total for Biennium
Salaries and wages	\$ 24,491.35	\$ 31,818.01	\$ 56,309.36
Rent	2,062.56	2,465.63	4,528.19
Postage	200.00	170.00	370.00
Office supplies	655.10	797.26	1,452.36
Expenses, Hog Cholera Erad.....		3,237.49	3,237.49
Telephone and telegraph.....	211.70	224.37	436.07
Miscellaneous expenses	684.08	792.71	1,476.79
Expenses field work	4,186.59	5,970.27	10,156.86
Freight and express	5.46	10.06	15.52
Medicinal and laboratory Sup.....	1,661.56	3,563.52	5,225.08
Tuberculosis Eradication			
Indemnity Fund	9,999.42	98,942.99	108,942.41
	<u>\$ 44,157.82</u>	<u>\$ 147,992.31</u>	<u>\$ 192,150.13</u>
1921-1922—			
Salaries and wages	\$ 24,491.35		
Expenses	19,666.47		
Total	\$ 44,157.82		
Transferred to University Hospital.....	5,000.00		
Bal. to pay claims for indemnity on file.....	7,242.43		
			\$ 56,400.25
Appropriation 1921-1922	\$ 56,400.00		
Balance from 1920-1921 .....	.25		
			\$ 56,400.25
Total expended during biennium for indemnities	\$125,826.21		
Indemnities paid from appropriations during biennium	108,942.41		
Claims on file paid after 10/1/23.....	\$ 16,883.80		
1922-1923—			
Salaries and wages	\$ 31,818.01		
Expenses	116,174.30		
			\$ 147,992.31
Appropriation 1922-1923	\$145,750.00		
Less amount transferred to University Hospital	5,000.00		
	\$140,750.00		
Balance from 1921-1922	7,242.43		
			\$ 147,992.43
Receipts	\$147,992.43		
Expenditures	147,992.31		
	\$.12		

UNIVERSITY OF MARYLAND

SUMMARY OF BUDGET—1925-1926-1927—REQUESTED STATE APPROPRIATIONS

	Maintenance	Buildings	Equipment	Land	Other Capital Expenditures	Total for Triennium
College Park	\$2,821,658.65	\$1,804,000.00	\$289,850.00	\$30,000.00	\$120,500.00	\$5,066,008.65
Baltimore Schools	592,500.00	950,000.00	145,000.00	50,000.00		1,737,500.00
Eastern Branch	110,250.00	161,600.00	27,000.00		3,600.00	302,450.00
Live Stock Sanitary	906,120.00					906,120.00
Department of Forestry	163,690.00	18,000.00		10,000.00	4,000.00	195,690.00
Maryland Geological Survey	59,625.00					59,625.00
Maryland Weather Service	7,530.00					7,530.00
State Dairymen's Association	15,000.00					15,000.00
	<u>\$4,676,373.65</u>	<u>\$2,933,600.00</u>	<u>\$461,850.00</u>	<u>\$90,000.00</u>	<u>\$128,100.00</u>	<u>\$8,289,923.65</u>

UNIVERSITY OF MARYLAND SUMMARY OF REQUESTS FOR MAINTENANCE FOR TRIENNIUM—1925, 1926, 1927

	Maintenance 1925	Maintenance 1926	Maintenance 1927	Total for Triennium
COLLEGE PARK:				
General University	\$545,685.00	\$595,685.00	\$595,685.00	\$1,737,055.00
Executive expenses	7,500.00	7,500.00	7,500.00	22,500.00
Deficiency in interest	2,047.44	2,047.44	2,047.44	6,142.32
State Fund (Experiment Station)	100,000.00	100,000.00	100,000.00	300,000.00
Biological Laboratory	15,400.00	15,400.00	15,400.00	46,200.00
Seed Inspection	9,300.00	9,300.00	9,300.00	27,900.00
Ridgely Farm	5,000.00	5,000.00	5,000.00	15,000.00
State Smith-Lever	46,287.11	46,287.11	46,287.11	138,861.33
County Demonstration	76,000.00	76,000.00	76,000.00	228,000.00
General Extension	25,000.00	25,000.00	25,000.00	75,000.00
State Horticultural	30,000.00	30,000.00	30,000.00	90,000.00
Canning Extension	10,000.00	10,000.00	10,000.00	30,000.00
Exhibit Extension	10,000.00	10,000.00	10,000.00	30,000.00
Marketing Extension	25,000.00	25,000.00	25,000.00	75,000.00
LIVE STOCK SANITARY SERVICE:				
Including hog cholera eradication, tuberculosis eradication and indemnity fund and dairy inspection	302,040.00	302,040.00	302,040.00	906,120.00
EASTERN BRANCH—PRINCESS ANNE:				
(For colored students)	36,550.00	36,750.00	36,950.00	110,250.00
BALTIMORE SCHOOLS:				
School of Medicine	70,000.00	70,000.00	70,000.00	
School of Dentistry	25,000.00	25,000.00	25,000.00	
School of Pharmacy	20,000.00	20,000.00	20,000.00	
School of Commerce	15,000.00	15,000.00	15,000.00	390,000.00
University Hospital	67,500.00	67,500.00	67,500.00	202,500.00
STATE DEPARTMENT OF FORESTRY				
	58,035.00	51,900.00	53,755.00	163,690.00
MARYLAND GEOLOGICAL SURVEY				
	20,675.00	19,450.00	19,500.00	59,625.00
MARYLAND STATE WEATHER SERVICE				
	2,510.00	2,510.00	2,510.00	7,530.00
STATE DAIRYMEN'S ASSOCIATION				
	5,000.00	5,000.00	5,000.00	15,000.00
Grand totals—Maintenance	\$1,529,529.55	\$1,572,369.55	\$1,574,474.55	\$4,676,373.65

UNIVERSITY OF MARYLAND

SUMMARY BY FUNDS OF REQUESTED APPROPRIATIONS FOR TRIENNIUM—1925-1927 (Continued)

GENERAL UNIVERSITY—COLLEGE PARK:

	Amount 1925	Amount 1926	Amount 1927	Total for Triennium
Salaries and wages and operating expenses..	\$545,685.00	\$595,685.00	\$595,685.00	\$1,737,055.00
Purchase of land	30,000.00			30,000.00
Structures	838,000.00	773,000.00	193,000.00	1,804,000.00
Equipment	66,850.00	118,000.00	105,000.00	289,850.00
Other capital expenditures	35,000.00	15,500.00	70,000.00	120,500.00

EXECUTIVE EXPENSES:

Salaries and wages and operating expenses	7,500.00	7,500.00	7,500.00	22,500.00
DEFICIENCY IN INTEREST:	2,047.44	2,047.44	2,047.44	6,142.32

EXPERIMENT STATION:

State Fund	100,000.00	100,000.00	100,000.00	300,000.00
Biological Laboratory	15,400.00	15,400.00	15,400.00	46,200.00
Seed Inspection	9,300.00	9,300.00	9,300.00	27,900.00
Ridgely Farm	5,000.00	5,000.00	5,000.00	15,000.00

EXTENSION SERVICE:

State Smith-Lever	46,287.11	46,287.11	46,287.11	138,861.33
County Demonstration	76,000.00	76,000.00	76,000.00	228,000.00
General Extension	25,000.00	25,000.00	25,000.00	75,000.00
State Horticultural Department	30,000.00	30,000.00	30,000.00	90,000.00
Canning Extension	10,000.00	10,000.00	10,000.00	30,000.00
Exhibit Extension	10,000.00	10,000.00	10,000.00	30,000.00
Marketing Extension	25,000.00	25,000.00	25,000.00	75,000.00

LIVE STOCK SANITARY SERVICE:

Salaries and wages and operating expenses	302,040.00	302,040.00	302,040.00	906,120.00
---	------------	------------	------------	------------

EASTERN BRANCH:

Salaries and wages and operating expenses	36,550.00	36,750.00	36,950.00	110,250.00
Structures	115,500.00	34,100.00	13,000.00	162,600.00
Equipment	2,000.00	20,000.00	5,000.00	27,000.00
Other capital expenditures	2,600.00			2,600.00

UNIVERSITY OF MARYLAND

SUMMARY BY FUNDS OF REQUESTED APPROPRIATIONS FOR TRIENNIUM—1925-1927 (Continued)

BALTIMORE SCHOOLS:

	Amount 1925	Amount 1926	Amount 1927	Total for Triennium
Salaries, wages and operating expenses.....	130,000.00	130,000.00	130,000.00	390,000.00
Purchase of land.....	50,000.00			50,000.00
Structures.....	10,000.00	450,000.00	490,000.00	950,000.00
Equipment.....			115,000.00	115,000.00

UNIVERSITY HOSPITAL:

Salaries, wages and operating expenses.....	67,500.00	67,500.00	67,500.00	202,500.00
Equipment.....	10,000.00	10,000.00	10,000.00	30,000.00

STATE DEPARTMENT OF FORESTRY:

Salaries, wages and operating expenses.....	58,035.00	51,900.00	53,755.00	163,690.00
Purchase of land.....	10,000.00			10,000.00
Structures.....	16,000.00	1,000.00	1,000.00	18,000.00
Other capital expenditures.....		1,000.00	3,000.00	4,000.00

MARYLAND GEOLOGICAL SURVEY:

Salaries, wages and operating expenses.....	20,675.00	19,450.00	19,500.00	59,625.00
---	-----------	-----------	-----------	-----------

MARYLAND STATE WEATHER SERVICE:

Salaries, wages and operating expenses.....	2,510.00	2,510.00	2,510.00	7,530.00
---	----------	----------	----------	----------

STATE DAIRYMEN'S ASSOCIATION:

Salaries, wages and operating expenses.....	5,000.00	5,000.00	5,000.00	15,000.00
Totals for Triennium.....	\$2,715,479.55	\$2,994,969.55	\$2,579,474.55	\$8,289,923.65

UNIVERSITY OF MARYLAND

SUMMARY OF BUILDINGS, EQUIPMENT AND LAND REQUESTED FOR TRIENNium, 1925, 1926, 1927

COLLEGE PARK:

	Buildings	Equipment	Land	Other Capital Expenditures	Total for Triennium
Administration Bldg., library and class rooms.....	\$300,000.00	\$30,000.00			\$330,000.00
Dining hall.....	175,000.00	15,000.00			190,000.00
Science building.....	275,000.00	20,000.00			295,000.00
Horticultural building and greenhouse.....	220,000.00	25,000.00			245,000.00
Skinner irrigation system.....				\$500.00	500.00
New poultry building.....	20,000.00	13,000.00			33,000.00
Soils greenhouse.....	5,000.00				5,000.00
Land for stock.....			30,000.00		30,000.00
Barns for stock.....	40,000.00				40,000.00
Live stock.....					20,000.00
Equipment for dairy building.....		40,000.00		20,000.00	20,000.00
Additions to engineering building and central heating plant.....					40,000.00
1 dormitory for 200 men.....	230,000.00	40,000.00			270,000.00
3 dormitories for 150 women.....	200,000.00	10,000.00			210,000.00
Home Economics Building.....	159,000.00	15,000.00			174,000.00
Concrete roads and pavements.....	100,000.00	20,000.00			120,000.00
Improving grounds and lighting.....				65,000.00	65,000.00
New water and sewage lines.....				15,000.00	15,000.00
Laundry building and equipment.....	25,000.00	15,000.00		20,000.00	20,000.00
Refitting library and for music department.....	15,000.00	10,000.00			40,000.00
Refitting Morrill Hall and Chemistry Building.....	20,000.00	15,000.00			25,000.00
Equipment Engineering Building.....		5,000.00			35,000.00
Equipment printing plant.....		6,850.00			5,000.00
Completion and equipment of gymnasium.....	20,000.00	10,000.00			6,850.00
					30,000.00
Totals, College Park.....	\$1,804,000.00	\$289,850.00	\$30,000.00	\$120,500.00	\$2,244,350.00

SUMMARY OF BUILDINGS, EQUIPMENT AND LAND REQUESTED FOR TRIENNium, 1925, 1926, 1927

Continued

BALTIMORE:

New hospital and clinical building with laboratories for medical, dental and pharmacy schools
 Animal building for dogs, rabbits and guinea pigs
 Household, medical, surgical, laundry and kitchen equipment
 Laboratory for operative surgery
 Remodeling library
 Laboratory equipment—medical

Totals—Baltimore

PRINCESS ANNE:

Administration and Instruction Building
 Greenhouses
 Dormitory for boys
 Home Economics Building
 Water tank and windmill
 Silo
 Ice house and dairy
 Hog houses
 Poultry houses and yards
 Farm drainage
 Improvement on house
 Three teachers' cottages

Total—Princess Anne

STATE DEPARTMENT OF FORESTRY

Grand Totals—University of Maryland

	Buildings	Equipment	Land	Other Capital Expenditures	Total for Triennium
	\$900,000.00	\$90,000.00	\$50,000.00		\$1,040,000.00
	10,000.00				10,000.00
	25,000.00	30,000.00			30,000.00
	15,000.00				25,000.00
		25,000.00			15,000.00
					25,000.00
Totals—Baltimore	\$950,000.00	\$145,000.00	\$50,000.00		\$1,145,000.00
	\$75,000.00	\$20,000.00			\$95,000.00
	2,800.00				2,800.00
	55,000.00	5,000.00			60,000.00
	9,000.00	2,000.00			11,000.00
	2,000.00				2,000.00
				1,000.00	1,000.00
	3,000.00				3,000.00
	600.00				600.00
	1,200.00				1,200.00
				2,600.00	2,600.00
	1,000.00				1,000.00
	12,000.00				12,000.00
Total—Princess Anne	\$161,600.00	\$27,000.00		\$3,600.00	\$192,200.00
	18,000.00		\$10,000.00	\$4,000.00	\$32,000.00
Grand Totals—University of Maryland	\$2,933,600.00	\$461,850.00	\$90,000.00	\$128,100.00	\$3,613,550.00

UNIVERSITY OF MARYLAND — STATE BOARD OF AGRICULTURE

Requested Appropriations for Maintenance Annually for Triennium — 1925-1926-1927

	Totals	For Purposes Not Exclusively Agricultural	For Agricultural Purposes Only
General University Administration*	\$545,685.00	\$34,935.00	
Registrar		3,350.00	
Library		15,700.00	
College of Arts and Sciences**		115,645.00	\$118,900.00
College of Agriculture			
College of Engineering			
College of Education			
College of Home Economics			
Military Science		58,860.00	
Department of Hygiene and Health		26,025.00	2,550.00
Physical Education		8,700.00	
Graduate School*		4,030.00	
Summer School		16,940.00	
General Service*		11,580.00	
Insurance		15,800.00	
		4,000.00	
		100,670.00	
		8,000.00	
		<u>\$424,235.00</u>	<u>\$121,450.00</u>
*70 per cent. of the expense is for agricultural work			
**50 per cent. of the credit hours taught in arts and sciences is for agricultural students		\$165,805.00	\$165,805.00
	\$545,685.00	\$258,430.00	\$287,255.00

UNIVERSITY OF MARYLAND — STATE BOARD OF AGRICULTURE.—Continued
Requested Appropriations for Maintenance Annually for Triennium —1925-1926-1927

	Totals	For Purposes Not Exclusively Agricultural	For Agricultural Purposes Only
Executive expenses	\$7,500.00	\$3,750.00	\$3,750.00
Deficiency in interest	2,047.44	2,047.44	
State Fund—Experiment Station	100,000.00		100,000.00
Biological Laboratory	15,400.00		15,400.00
Seed Inspection	9,300.00		9,300.00
Ridgely Farm	5,000.00		5,000.00
State Smith-Lever	46,287.11		46,287.11
County Demonstration	76,000.00		76,000.00
General Extension	25,000.00		25,000.00
State Horticultural Department	30,000.00		30,000.00
Canning Extension Fund	10,000.00		10,000.00
Exhibit Extension Fund	10,000.00		10,000.00
Marketing Extension Fund	25,000.00		25,000.00
Live Stock Sanitary Service	302,040.00		302,040.00
Eastern Branch	36,550.00		36,550.00
State dairymen's Association	5,000.00		5,000.00
School of Medicine	70,000.00	70,000.00	
University Hospital	67,500.00	67,500.00	
School of Pharmacy	20,000.00	20,000.00	
School of Commerce	15,000.00	15,000.00	
School of Dentistry	25,000.00	25,000.00	
Departments merged with University of Maryland since last biennium:			
Department of Forestry	58,035.00		58,035.00
Maryland Geological Survey	20,675.00		20,675.00
Maryland Weather Service	2,510.00		2,510.00
	<hr/>	<hr/>	<hr/>
	\$1,529,529.55	\$461,727.44	\$1,067,802.11
		(30%)	(70%)

INVENTORY UNIVERSITY OF MARYLAND September 30th, 1923

GENERAL UNIVERSITY— (College Park Property):			
	Value of Building	Total of Buildings	Value of Equipment
1—Agricultural Building	\$198,954.00		\$60,838.58
2—Bake shop	400.00		403.76
3—Boiler house	160.00		
4—Calvert Hall (dormitory)	107,000.00		8,934.46
5—Cannery	625.00		
6—Carriage shed	900.00		
7—Chemical laboratory	18,000.00		7,236.66
8—Dining hall and kitchen	14,000.00		18,221.66
9—Engineering buildings	80,000.00		66,569.35
10—Gas machine house	300.00		
11—Girl's dormitory (Y Hut)	3,000.00		690.17
12—Gerneaux Hall (dormitory)	8,000.00		1,769.11
13—Greenhouses	8,000.00		2,406.62
14—Home economics practice house	25,500.00		2,647.22
15—Hospital	7,500.00		1,015.36
16—Insectary	150.00		280.40
17—Library	16,090.00		18,693.62
18—Laundry	3,000.00		1,175.27
19—New pump house	1,100.00		
20—Old pump house	100.00		
21—Science hall and greenhouse	36,775.00		30,571.94
22—Servant's quarters	533.00		
23—Silverster Hall (dormitory)	97,000.00		4,963.58
24—Lumber storage shed	270.00		
25—Stable and garage	1,600.00		
26—Water tower and tank	4,400.00		
27—Filtration plant	25,142.00		12,596.74
Steam boilers (included in engineering building equipment)			
Equipment on other property			1,400.35
Totals.....		\$658,499.00	\$240,414.85

September 30th, 1923

Dental equipment on rented property

200

INVENTORY—Continued
UNIVERSITY OF MARYLAND
September 30th, 1923

EXPERIMENT STATION—

(College Park):	Value of Building	Total of Buildings	Value of Equipment	Total of Equipment
44—Rossbourg Building	11,500.00		9,237.65	
45—Agronomy building	3,500.00		1,168.83	
46—Biological laboratory	11,200.00		5,719.28	
47—Seed storage and machinery building	1,200.00		1,744.40	
48—Dairy building	1,050.00			
49—Hog house	830.00			
50—Horticultural building and green- house	8,800.00		7,226.20	
51—Cow stable	4,200.00		15,289.06	
52—Dairy barn, stable and implement house	17,300.00			
53—Hay barrack	2,300.00			
54—Silos	1,333.00			
55—Poultry feed houses	400.00		560.00	
56—Poultry houses	706.00			
57—Poultry storage houses	300.00		629.21	
58—Main poultry house	2,000.00			
59—Barn	260.00			
60—Dwelling (farm house)	3,100.00			
61—Dwelling (pebbledash)	1,290.00			
62—Dwelling (shingle roof)	1,240.00			
63—Dwelling (concrete block)	2,200.00			
64—Dwelling (frame)	1,100.00		3,902.03	
65—Oxidation plant	10,000.00		2,736.32	
Equipment in agriculture building			610.78	
Equipment on other property				
Totals		\$85,809.00		\$48,823.76

INVENTORY—Continued UNIVERSITY OF MARYLAND

September 30th, 1923

EXPERIMENT STATION— (Ridgely Farm):

	Value of Building	Total of Buildings	Value of Equipment	Total of Equipment
65—Main building	*\$6,000.00		83.36	
66—Barn				
67—Corn crib				
68—Fertilizer building				
69—Tenant house				
70—Chicken house	750.00		1,728.03	
71—Tool and machinery building				
72—Wagon shed				
73—Hog house				
74—Chicken house				
75—Tenant house and smoke house	585.00			
Totals.....		\$7,765.00		\$1,811.39

*Purchased in 1914.

EXTENSION SERVICE— (Located in Agricultural Building):

Total.....			\$12,489.93	\$12,489.93
TOBACCO BARN— (Upper Marlboro):				
76—Tobacco barn	\$1,000.00		\$8.10	
Total.....		\$1,000.00		\$8.10

INVENTORY—Continued
UNIVERSITY OF MARYLAND
September 30th, 1923

EASTERN BRANCH (School for Colored)— (Princess Anne):			
	Value of Building	Total of Buildings	Total of Value of Equipment
77—Portable building	\$2,250.00	}	\$15,088.54
78—Barn	2,500.00		
79—Dwelling	2,000.00		
80 } Six small buildings.....	1,313.00		
85 }			
Totals.....		\$8,063.00	\$15,088.54
LIVE STOCK SANITARY SERVICE— (Baltimore Offices):			
Total of inventory of buildings and equipment			\$2,465.00
		\$1,708,136.00	\$800,973.62
INVENTORY OF LAND:			
College Park, 286 acres		\$85,800.00	
Baltimore (lots included in value of buildings)			
Ridgely Farm, 50 acres		6,000.00	
Eastern Branch, 70 acres		9,000.00	
Upper Marlboro—tobacco barn on rent- ed land			
Total value of land.....		\$100,800.00	
SUMMARY:			
Inventory of land		\$100,800.00	
Inventory of buildings		1,708,136.00	
Inventory of equipment		800,973.62	
Total value of plant		\$2,609,909.62	

NOTE: The following new buildings are in process of construction:
Dairy building (estimated cost)—\$101,300.00
Gymnasium, armory, stadium and athletic field (estimated cost)— 161,500.00

SUMMARY OF INVENTORY BY CLASSES

September 30, 1923

	General University	Experiment Station	Extension Service	Eastern Branch	University Hospital	Nurses' Home	Baltimore Schools	Total
Scientific apparatus and laboratory equipment	\$40,606.72	\$17,535.42	\$2,096.27		\$15,742.47		\$173,159.19	\$249,140.07
Furniture and fixtures	58,975.95	5,188.74	8,541.21		25,679.06	13,031.66	29,270.35	140,686.97
Tools, machinery and appliances	38,817.56	5,902.01	180.22	\$15,088.54	6,757.16			66,745.49
Museum specimens and exhibits	13,336.25	300.50	134.26				160,000.00	173,771.01
Books, maps, etc.	28,367.62	1,585.26	340.74					30,293.62
Engravings, pictures, etc.	765.31	319.70	1,065.88					2,150.89
Livestock	489.50	12,865.00						13,354.50
Linen, bedding and miscellaneous equipment	1,606.99		131.35		3,409.06			5,147.40
Heating plants	(Included with furniture and fixtures)						9,500.00	9,500.00
X-Ray equipment					17,654.15			17,654.15
Refrigerating equipment					9,330.00			9,330.00
Power machinery	26,820.44	6,946.62			16,338.95			50,106.01
Property of U. S. Bureau of Public Roads	22,433.56							22,433.56
Property of Maryland State Roads Commission	3,572.05							3,572.05
Property of Live Stock Sanitary Service:								
At College Park	4,622.90							
At Baltimore	2,465.00							
	\$242,879.85	\$50,643.25	\$12,489.93	\$15,088.54	\$94,910.85	\$13,031.66	\$371,929.54	\$800,973.62

TRIENNIAL REPORT
of the
University of Maryland
and
The Maryland State Board of Agriculture



Including a summary of the work and needs of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of work under the jurisdiction of the University and State Board of Agriculture.

From September 30, 1923, to October 1, 1926

TABLE OF CONTENTS

	PAGE
Letters of Transmittal	5
Organization of the Board	6
Introduction	7
General Review of Building and Equipment Needs	10

THE UNIVERSITY

College of Agriculture	25
Agricultural Experiment Station	34
College of Arts and Sciences	38
School of Business Administration	41
College of Education	43
Summer School	53
College of Engineering	55
Graduate School	57
College of Home Economics	64
School of Medicine	66
School of Law	69
Dental School	71
Registrar's Report	73
Extension Service	77
School of Pharmacy	93
University Hospital	96
Department of Forestry	98
The Library	111
Live Stock Sanitary Service	118
Military Department	128
Feed, Fertilizer and Lime Inspection Service	131
Eastern Branch of the University of Maryland	135
Financial Report	138

Hon. Samuel M. Shoemaker,

*Chairman, Board of Regents, University of Maryland
and Maryland State Board of Agriculture.*

Sir: Inasmuch as the report of the University of Maryland and the Maryland State Board of Agriculture, covering the three years of work from September 30, 1923, to October 1, 1926, involves only one month of my administration, there is little for me to say in connection with it. However, it seems fitting and only fair for me to disclaim any credit for the accomplishments set forth in this report. Former President Albert F. Woods merits all favorable comment for the progress that has been achieved.

Indeed, after reading the report, I wonder that President Woods was able to accomplish as much as he did, in view of the limited finances of the institution. In carrying out his plans Dr. Woods tells me that he had the unswerving support and splendid cooperation of the Board of Regents, State officials, and members of his faculty, but even with such cooperation, his task was one of great magnitude.

The University still is confronted with many difficulties. Ever increasing demands for its services render the financial problem alone far greater than anybody not directly familiar with the work could possibly conceive. Already I have found evidences that the same cooperation given Dr. Woods will be received by me, and no one knows better than I that such cooperation is absolutely essential if the University is to continue its progress. The problems of the President of a university are not only the problems of all those interested in the university, but the aid of all those interested is necessary if the problems are to be satisfactorily solved.

I am gratified, indeed, to take up the work in Maryland, and already have been here long enough to form many pleasant associations, and to see the possibilities of rendering a fruitful service in the field I have chosen to make my life work.

Very truly,

R. A. PEARSON,
President.

LETTERS OF TRANSMITTAL

*His Excellency, Governor Albert C. Ritchie,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last three years.

Very truly yours,

SAMUEL M. SHOEMAKER,

*Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.*

January 1st, 1927.

*Hon. Samuel M. Shoemaker,
Chairman, Board of Regents of the University of Maryland
and of the Maryland State Board of Agriculture.*

Sir: Herewith I am submitting a brief report of the work of the University of Maryland, the Maryland State Board of Agriculture, the Agricultural Experiment Station, Extension Service, and the other branches of work under the two Boards for the last three years. A statement showing the financial needs of the University and the State Board of Agriculture is appended. I am also submitting a short statement of the various funds other than State appropriations used for the support of the University.

Very truly,

ALBERT F. WOODS,
President and Executive Officer.

January 1st, 1927.

BOARD OF REGENTS

SAMUEL M. SHOEMAKER Chairman.....	1924-1933
HENRY HOLZAPFEL	1925-1934
ROBERT CRAIN	1924-1932
JOHN M. DENNIS	1923-1931
DR. FRANK J. GOODNOW.....	1922-1930
JOHN E. RAINE.....	1921-1929
CHARLES C. GELDER.....	1920-1928
DR. W. W. SKINNER, Secretary.....	1919-1927
B. JOHN BLACK.....	1918-1926

COMMITTEES

EXECUTIVE

SAMUEL M. SHOEMAKER, Chairman
DR. FRANK J. GOODNOW
B. JOHN BLACK
ROBERT CRAIN
JOHN M. DENNIS

EXTENSION AND DEMONSTRATION

ROBERT CRAIN, Chairman
B. JOHN BLACK
JOHN E. RAINE

EXPERIMENT STATION AND INVESTIGATION

B. JOHN BLACK, Chairman
DR. W. W. SKINNER
HENRY HOLZAPFEL

INSPECTION AND CONTROL WORK

JOHN M. DENNIS, Chairman
HENRY HOLZAPFEL
CHARLES C. GELDER

UNIVERSITY AND EDUCATIONAL WORK

DR. FRANK J. GOODNOW
ROBERT CRAIN
DR. W. W. SKINNER

General Introduction

The Board of Regents, University of Maryland:

Gentlemen: The years 1924, 1925, 1926 have been years of marked progress in all departments of the University of Maryland. The University has been subjected to careful study by the "Association of American Universities" and was placed on the accredited list of this Association. It is also on the accredited list of the "Middle States and Maryland" and has membership in the Association of State Universities, The Association of Land Grant Colleges, American Council on Education, and Association of American Colleges.

Members of its staff have taken an active part in State and National affairs in their respective fields. A number of them hold positions of great responsibility in the *National Research Council, Association of Land Grant Colleges, American Society of Engineers, Society for the Promotion of Agricultural Education, Maryland Agricultural Society and Farm Board Federation, National Association Marketing Officials, National Association Commissioners of Agriculture, American Chemical Society.*

These contacts have been stimulating and helpful to the staff and to the University, and we believe that helpful service is being rendered by the University representatives. It is hoped that the policy of permitting and encouraging this kind of service may be continued.

THE GROWTH OF THE UNIVERSITY OF MARYLAND

The growth of a living organism consists in the differentiation and perfection of its parts, and their development for functional purposes. This is usually, but not necessarily, accompanied by an increase in size. The University as a State Institution was organized in 1920 by authority of the Legislature by consolidating the old University of Maryland and the Maryland State College, formerly the Maryland Agricultural College. The Maryland Agricultural College had been taken over by the State in 1916 under a charter from the Legislature drawn up after careful study by citizens and educators with a view to protecting the institution in every possible way from political domination and placing it on an equal footing with the State Colleges of other States.

The charter was eminently successful in this respect and is recognized as one of the best possessed by any institution of learning. The consolidation act preserves all the right, powers and privileges of the

old charter in addition so far as the Regents may desire to use them. In the reorganization of the State Government the University and State Board of Agriculture are made a department of the State Government coordinate with the State Department of Education and both are represented in the Governor's Council. The control, however, remains in the Board of Regents for the University and the Board of Education for the State Department of Education.

Recent legislation has tended to a considerable extent to centralize the control of appropriations in the Governor and State Comptroller. This is accomplished through the State Budget system. While in the hands of enlightened officials this system is an advantage to the University and the State, it would be possible under it greatly to hamper if not destroy the University. Looking forward to the time when attempts might be made as they have been in other states, to control the University by some partisan group it would be well to protect its financial interests by a constitutional provision for a definite part of the tax rate to be expended by the Board of Regents for the educational conduct of the University. An increasing number of states have done this and while, as a rule, it does not meet all the financial needs the balance can be taken care of as the need develops, by legislative enactment. It does furnish a certain reasonable assured income on which the work of the University can be based. This does not refer, of course, to State Service work conducted by the University, The State Experiment Station, The State Department of Forestry, Geological and Economic Survey, The Extension Service, Seed Control, Fertilizer Control, Feed Control, or the work of the State Board of Agriculture, such as the Live Stock Sanitary Service, State Department of Markets, &c. These should be handled the same as other State departments on biennial appropriations.

The educational work must be planned long in advance and it is impossible for the faculty and Regents to do this unless an assured income is available.

In closing my nine years of work in behalf of higher education and the promotion of agriculture and country life in Maryland, I want to take this occasion to express my sincere appreciation to the people of the State, to the Governor, Treasurer, Comptroller, Attorney-General and other State officers and especially to the Board of Regents for the encouragement and cooperation always so freely given.

It is with deep regret that in a measure I must in my new work lose the close personal contacts in Maryland that have been so pleasant. It is a pleasure, however, that in a general way I may keep in touch with the University and the agricultural work through the official relations and the fine cooperative spirit existing between the University, the Board of Agriculture, and the United States Department of Agriculture. As a citizen of the State I shall also of course keep a lively interest in all matters pertaining to its welfare.

It is a pleasure also to know that all that is best in my administration will be preserved by my successor as a basis for the larger and better things ahead in these fields of service to the State. I have known Dr. Pearson for many years. In him the State has a man of sterling character, great ability, untiring energy and vision. The years ahead look bright for the University and the State it serves.

Respectfully,

A. F. WOODS,
Retiring President.

September 1st, 1926.

A General Review of Building and Equipment Needs

In the Biennial Report of the Board of Trustees of the Maryland State College for 1919, the urgent needs at College Park for buildings and equipment were presented, including the following items: Men's dormitory, women's dormitory, five six-room dwellings, dining hall, cold storage and ice plant, gymnasium, armory and athletic field, central heating plant, heating conduits, chemical laboratory, farm machinery garage and repair shop, veterinary pathology laboratory, barns for beef cattle, dairy cattle, horses, sheep and hogs, spur track, special repairs and equipment for old buildings, sewers, additional land at College Park.

At the Eastern Branch, Princess Anne, an agricultural building, drainage, and completion of barn.

The estimated cost of these improvements was \$1,519,400.00.

In the same report there was also presented an estimated additional need within five years as follows: Additional dormitories for men and women, an administration building, auditorium, library and museum, enlargement of engineering plant, lighting, grounds, extension service building, general alterations and repairs, permanent roads and walks, fences, animal husbandry farm, dam and fish hatchery ponds, a total of \$760,160.00.

The recommendations in the Biennial Report were followed by a separate, more extended statement on the "Development of Maryland's Agricultural and Industrial Resources by Means of Appropriations," issued in January, 1920 (21 pages). This statement gave facts and figures proving that money appropriated for agricultural development is a safe and profitable investment.

The General Assembly for 1920 provided items in the Bond Issue amounting to \$203,000.00 for "construction of a men's dormitory and the reconstruction, repair and completion of other buildings and equipment." A dormitory for men (Silvester Hall) and a Home Management House providing for about 20 women were constructed and an addition to Gerneaux Hall, increasing the facilities there for women to about 20. Additional claims on the Agricultural Building construction were settled and repairs and improvements were made to Calvert Hall (men's dormitory), and the filtration plant, which had been constructed from funds provided by the State Council of Defense in connection with the Students Army Training Corps. Some improvements,

amounting to about \$4,000.00 were made at the Eastern Branch, Princess Anne.

During the War, the Government built a temporary addition to the dining hall, which was taken over by the University after the close of the War, at a cost of \$1,500.00. This made it possible to defer temporarily the construction of a new dining hall.

At the 1920 session of the General Assembly, the Maryland State College was consolidated with the University of Maryland under the latter name and the Board of Trustees of the Maryland State College became the Board of Regents of the University of Maryland.

The estimates for 1922, presented in the Biennial Report of the Board of Regents, October, 1921, included additional dormitories for men and women, dwellings for help, dining hall, cold storage and ice plant, gymnasium, armory and athletic field, chemical and science building, garage and repair shop, barns for livestock, additional land, greenhouses, engineering building alterations, repairs, miscellaneous equipment, and the first unit of a dairy manufacture laboratory, a total of \$1,321,800.00 for College Park for buildings, equipment and improvements for the biennium.

There was also requested for equipment for the Medical School, Hospital and Nurses Home in Baltimore, \$75,000.00 for the biennium, and for additional land and construction at the Eastern Branch, \$25,000.00.

The General Assembly authorized \$142,000.00 for gymnasium, armory, assembly hall, recreation center and athletic field; \$71,200.00 for animal husbandry farm, including land and dairy laboratory; \$4,200.00 for lighting grounds and fixing roads; \$5,500.00 for water and sewer connections; \$15,000.00 equipment for Nurses Home; \$10,000.00 for refrigerating plant in the University Hospital; \$3,150.00 for equipment in the School of Dentistry; \$3,150.00 for equipment in the School of Pharmacy; a total of \$254,300.00.

Requests to the Assembly for 1925 to 1927 repeated the former requests for administration, library and classroom building, dining hall, science building, land, barns and livestock, addition to engineering building, dormitories for men and women, roads and walks, additional lighting, water and sewer lines, and in addition requested a horticultural building, poultry buildings, soils greenhouse, home economics building, laundry building, completion and equipment of gymnasium, equipment of dairy building, refitting and equipping several old buildings, totaling \$2,244,350.00 for the three years. The institution had been growing rapidly and costs of all kinds had nearly doubled.

At Baltimore, the Board requested for buildings, land and equipment, \$1,145,000.00; and for buildings, land and equipment at the Eastern Branch, \$192,200.00, and \$32,000.00 for additional land and buildings for the Department of Forestry. This was supplemented by

urgent recommendations from a Citizens' Committee headed by Mr. Walter Brooks and Mr. George M. Shriver. This emphasized the urgent needs of the University Hospital.

The 1924 session of the Assembly provided for dining hall and equipment at College Park, \$150,000.00; for a science building and equipment, \$210,000.00; building and equipment at the Eastern Branch, \$40,000.00; equipment for dairy building, College Park, \$25,000.00; equipment for the Schools of Pharmacy, Dentistry and Medicine, \$40,000.00; and \$75,000.00 for alterations to University Hospital to reduce the fire risk.

These various grants have considerably improved the building and equipment facilities of the University. But those that have not been granted are far more urgently needed than ever before. The University has grown rapidly. Its physical plant is decidedly inadequate for the work it must do. Most of its buildings at College Park, Baltimore and Princess Anne are old, of cheap construction and in poor repair and built for one-quarter the number of students now using them. Costs of building, land and equipment are increasing from year to year. In many cases it will cost double now to get what we need and have urgently requested in previous years.

It is not likely that the University will greatly exceed its present size. The number of students at College Park will probably not exceed 2,000, which would be double the number there at present, and the number in Baltimore will remain in the neighborhood of 3,000. If Johns Hopkins discontinues the first two years of college work the University of Maryland might have to provide for about 500 additional arts and science and engineering students in the first two years. Part of these would be taken care of at College Park and part in Baltimore. The cost to the State would probably be about the same as it is now in providing for these at Hopkins.

The present book value of the plant at College Park, including the University, Experiment Station, and farm is about \$1,500,000.00. This will be increased to nearly two million when the new dining hall and science buildings are completed. The only modern buildings are the agricultural building, the two dormitories for men, the gymnasium and stadium, and the dairy building. With some repairs and alterations considerable use may yet be made of the engineering building, Morrill Hall, the old library and chemistry building. All of the farm and station buildings should be replaced as soon as possible with modern structures. Most of them are of temporary wood construction.

The present value of the plant at Baltimore is approximately \$1,000,000.00. Only a small part of this was provided by the State. The location at Lombard and Greene Streets is in the center of the industrial district. It is particularly well located for the work of the Schools of Medicine, Dentistry and Pharmacy, being easily available to the large number of people who daily visit its dispensaries, clinics

and hospital. This fact, with the large investment involved, makes it desirable to at least maintain the medical group (Medicine, Dentistry and Pharmacy) at this center. Some of the surrounding property should be taken over and converted into parks for the comfort of the sick and convalescent and the workers in the various departments. The land values would be increasing so that there would be little loss on such an investment. The most urgent building needs can be provided for on property already owned by the University, with the exception of a few lots.

The first unit should be a laboratory, dispensary and classroom unit on the Northwest corner of Lombard and Greene Streets for joint use of the Schools of Medicine, Dentistry and Pharmacy. This will cost approximately \$500,000.00. The second unit of the Nurses Home, a duplicate of the present unit, is urgently needed to house nurses now cared for largely in old buildings, in a very unsatisfactory manner. This will cost, with equipment, approximately \$150,000.00.

The expenditure of \$75,000.00 in improvements to the University Hospital has considerably reduced the fire risk. Further improvements should be made by the addition of a fireproof maternity wing, which can be done for about \$100,000.00. The laundry should also be reconstructed and equipped, at a cost of about \$25,000.00 or \$30,000.00. Additional fireproofing and reconstruction in the old Hospital and the library building should be carried out at a cost of approximately \$50,000.00. When additional hospital space is required it can be provided as previously planned, between the Nurses Home and the laboratory wing, on land largely owned by the University, at a cost of approximately \$1,000,000.00. This would make a total cost of buildings and improvements, the need for which is now urgent, of about \$1,800,000.00. Adding \$200,000.00 for the purchase of additional property would bring the total up to \$2,000,000.00. This could be spread through a period of five years. The needs after that would be comparatively small.

According to the U. S. Bureau of Education, the investment in land, buildings and permanent improvements for higher educational institutions is as follows for the following states:

MARYLAND	\$2,540,951.00	(Additional urgently needed \$3,988,500.00)
Alabama	3,491,602.00	
Colorado	8,384,571.00	
California	19,782,134.00	
Florida	3,631,000.00	
Michigan	24,733,764.00	
Minnesota	18,373,150.00	
Mississippi	5,912,345.00	
Missouri	6,663,794.00	
Nebraska	7,021,794.00	

New York	13,304,800.00	(Cornell University)
North Carolina	11,546,946.00	
North Dakota	4,059,170.00	
Ohio	14,600,129.00	
Oklahoma	5,687,928.00	
Oregon	6,356,144.00	
Pennsylvania	4,061,944.00	(Penna. State College)
South Carolina	9,665,521.00	
Texas	14,415,560.00	
West Virginia.....	3,059,580.00	

SUMMARY OF BUILDINGS AND LAND NEEDED AT COLLEGE PARK

1. Replacement of main building destroyed by fire about thirteen years ago, to provide for library, business offices and classrooms, including books and equipment\$345,000.00
2. Completion of Ritchie Gymnasium..... 25,000.00
To provide for cost of completing the building, in addition to the amount available after failure of contractors.
2. Garage, Plumbing and Carpenter Shop..... 25,000.00
At present, all of this work is carried on in the basement rooms of the Agricultural Building, in space needed for the educational work.
2. Home Economics Building and Dormitory for Girls (50) 100,000.00
The girls now have the old frame house formerly occupied by the President, which provides for 20 girls; the Home Management House for Home Economics students provides for 20 girls; and a temporary shack known as the "Y Hut," which provides for about 20 girls. Considerably more than this number must now find rooms off the campus and many are turned away on account of the lack of suitable living conditions for them.
2. Dormitory for Men..... 100,000.00
The dormitories for men are over crowded. Additional rooms for 100 men is urgently needed.
2. Poultry houses and yards..... 20,000.00
2. Urgent repairs and alterations..... 35,000.00
2. Infirmary and equipment..... 50,000.00
We now have a population of 1,000 students. The small building now used as an infirmary is entirely inadequate.
2. Land 55,000.00
Additional land in the vicinity of the University should be purchased before it gets any higher in price. It is urgently needed for the agricultural and horticultural work (350 acres).

3. A new horse barn should be constructed so that all of the present barn can be devoted to dairy cattle.....	15,000.00
It will cost \$10,000.00 to reconstruct the dairy barn. If it is moved from its present location the cost will be \$25,000.00.	
Sheep barn	5,000.00
Livestock	5,000.00
3. Horticultural Building, Greenhouses, Packing Houses, etc.	300,000.00
Horticulture is one of the most important industries in the State and is capable of large expansion. It requires special facilities which we do not now have.	
3. Engineering Addition for laboratories and shops, and addition to and reconstruction of central heating plant	285,000.00
The College of Engineering is doing fine work and is growing rapidly. It is cooperating closely with the State Roads Commission in highway engineering research and with the U. S. Bureau of Public Roads.	
3. Livestock Sanitary Building.....	100,000.00
Urgently needed for the Livestock Sanitary Work.	
4. Water and Sewer Lines.....	30,000.00
The Sanitary Commission has developed its system so that the University can make more use of it. Permanent sewer and water lines should be installed as soon as possible.	
4. Concrete Roads.....	65,000.00
There are no permanent roads on the University property at present. About two miles should be built as soon as possible.	
4. Concrete Walks (two miles)	10,000.00
We have reached a point in the development of the campus when permanent walks can be laid. It is now very bad for the students and the buildings in wet weather.	
4. Additional lighting	3,000.00
4. Planting and landscaping.....	5,000.00

BUILDINGS AND PERMANENT IMPROVEMENTS NEEDED AT BALTIMORE

Attention was called in the last Biennial Report to the urgent need of a modern fireproof Hospital in Baltimore. The improvements made in the old University Hospital with the \$75,000.00 appropriated by the last General Assembly have greatly reduced the fire risk. The building, however, is old and a modern fireproof Hospital should be added to the plant as soon as money can be secured for the purpose. The Hospital unit will cost approximately \$1,500,000.00, including an addition unit to complete the Nurses Home, and the Laboratory unit will cost about \$500,000.00. The latter should be constructed first, as

it is the most urgently needed for the joint use of the Schools of Medicine, Dentistry* and Pharmacy.

Reconstruction and enlargement of the Law Building for law and general classroom purposes, \$100,000.

Purchase of property surrounding the present University plant at a cost of \$250,000.00, with right of condemnation, is highly desirable.

As soon as the old University Hospital can be vacated, it can, at small cost, be converted into classrooms and offices for Law, Business Administration, and Arts and Sciences. It would provide sufficient and well adapted space for this purpose.

MAINTENANCE

The sources of maintenance for the various branches of the University and other work under the Board of Regents and State Board of Agriculture are as indicated in the table below:

SUMMARY	Amount	Amount	Governor's
ALL FUNDS	Appropriated	Requested	Allowance
MAINTENANCE	1923-24	1925-26-27	1925-26-27
General University.....	\$227,195.45	\$545,685.00**	\$227,195.45
Executive Expenses.....	5,000.00	7,500.00	5,000.00
Deficiency in Interest.....	2,047.44	2,047.44	2,047.44
State Fund (Expt. Station).....	66,900.00	100,000.00	66,900.00
Biological Laboratory.....	5,500.00	15,400.00	5,500.00
Seed Inspection.....	8,200.00	9,300.00	8,200.00
Ridgely Farm.....	5,000.00	5,000.00	5,000.00
State Smith-Lever.....	46,287.11	46,287.11	46,287.11
County Demonstration.....	48,000.00	76,000.00	50,000.00
General Extension.....	15,000.00	25,000.00	15,000.00
State Hort. Department.....	8,000.00	30,000.00	12,560.00
Canning Extension Fund.....	.....	10,000.00	.....
Exhibit Extension Fund.....	.....	10,000.00	.....
Marketing Extension Fund.....	.....	25,000.00	10,000.00
Livestock Sanitary Service.....	145,750.00	302,040.00	196,190.00
Eastern Branch.....	18,120.00	36,550.00	18,120.00
School of Medicine.....	42,500.00	70,000.00	42,500.00
University Hospital.....	22,500.00	67,500.00	37,500.00
School of Pharmacy.....	.....	20,000.00	10,000.00
School of Commerce.....	.....	15,000.00	.....
School of Dentistry.....	.....	25,000.00	.....
State Dairymen's Assn.....	5,000.00	5,000.00	5,000.00
Dept. of Forestry.....	29,175.00	58,035.00	32,175.00
Maryland Geological Survey.....	18,840.00	20,675.00	18,875.00
Maryland Weather Service.....	2,510.00	2,510.00	2,510.00
Totals — Salaries, Wages and Operating Expenses.....	\$721,525.00	\$1,529,529.55	\$816,560.00

* The School of Dentistry will continue a large part of its work in the present building, provided that the building can be extended to Lombard Street. This can be done at comparatively small cost, \$65,000-\$75,000. Dentistry and Pharmacy propose to earn this amount through their clinics during the next two years if the plan is approved by the Board of Regents and the Board of Public Works.

** Amount requested for 1926 and 1927 was \$595,685.00, being an increase of \$50,000.00 to take care of buildings in case they were allowed.

It will be observed that except in the School of Pharmacy no increases were allowed for *educational work proper* as distinguished from the Experiment Station, Extension and Service work.

STATE

The items involved in the University work are:

1. General University—College Park	\$227,195.45
16. Eastern Branch (for colored students)	18,120.00
17. School of Medicine.....	42,500.00
18. University Hospital	37,500.00
19. School of Pharmacy	10,000.00
20. School of Commerce.....	
21. School of Dentistry	

FEDERAL

The Federal funds available for the educational work are:

Morrill Nelson (College Park).....	\$40,000.00
Morrill Nelson (Princess Anne).....	10,000.00
Smith-Hughes (College Park)	8,342.50
Interest on Morrill Fund (College Park)	4,784.50
Deficiency in Interest (College Park).....	2,047.44

\$55,000.00 of this is available for educational work at College Park, and \$10,000.00 for the colored work at Princess Anne.

Adding the Federal funds available at College Park to the State funds used there gives a total of approximately \$282,369. Taking an average registration of 1,000 students reduced to a four-year basis would be a per capita general carrying cost from the State and Federal sources of approximately \$282.00.

FEES

There is available also at College Park from fees (not including athletics, room, board, laundry, etc.) about \$65,000.00, or \$65.00 per capita for the four-year students, or a total per capita of \$347.00.

Twenty-two universities have a per capita of \$500.00 or over; twenty-four have under \$400.00; the highest is \$1,815.00, and the lowest \$70.00. The College Park Branch of the University occupies about a median position in the item of per capita general carrying costs.

Of the total amount available for maintenance \$102,250.00 is required for General Service, divided as follows:

Repairs and Alterations	\$45,820.00
Purchasing, Mail and Transportation	11,350.00
Janitorial	14,800.00
Heating and Lighting	30,180.00

This is \$102.00 per capita, or 29% of the per capita cost. These costs are all high in proportion to educational costs. This is due to

the fact that most of the buildings are old, of cheap construction and widely separated, mostly having separate heating plants. Coal has to be hauled by truck and team from the B. & O. Station over dirt roads in very poor condition most of the year. If they were not maintained in passable condition by the University they could not be used at all during the spring months. Subtracting these items from the general per capita costs leaves \$245.00 for educational work proper, including teaching, salaries, wages, books, equipment, supplies, traveling expenses, general administration, library, registration, etc. This is about two-thirds of what is needed to conduct the work as efficiently as it should be done.

Additional help is needed in the Business Office in accounting, and especially in cost accounting. The conduct of a detailed educational cost accounting system, such as is now recommended by the U. S. Bureau of Education and used by many of the leading colleges and universities, would cost about \$5,000.00 a year, in addition to what we are now doing. A general business manager is needed to correlate the business conduct of the widely separated offices and departments. The salary and expenses of this office would be at least \$6,000.00.

Additional help is required in the registration office, both at College Park and Baltimore. Two additional full-time clerks are needed at \$1,500.00 each, and part-time help at rush periods at \$750.00 for each place.

The library at College Park has never been adequate even for the institution when it was small. When there were few students, however, we were able to make more effective use of the libraries in Washington. This is not now possible, except for advanced students. Books and periodicals must be available on the campus. The library must be at least doubled in size to meet the requirements of our present student body. A new building is absolutely necessary, but additional books should not wait for this. An additional cataloguer and library assistant are also essential. At least \$5,000.00 a year in addition to the amount (\$11,240.00) now available is necessary for books and \$3,500.00 for cataloguer and assistant.

The situation in the library at Baltimore is about the same as at College Park. There are about 15,000 bound volumes, exclusive of magazines, reports and documents, at College Park, and 22,250 at Baltimore. The space available at Baltimore is inadequate and must be enlarged, either by moving the children's clinic, now occupying the basement of the library building, to some other location, or by providing space in some other building for part of the library. \$5,000.00 a year should be available for books, in addition to approximately \$8,000.00 set aside from fees for the general support of the library. Two additional assistants (\$2,000.00 and \$1,500.00) are needed.

In the General Service Department three additional firemen are needed; one day watchman and one night watchman are also needed.

Firemen—3 at \$1,200.00	\$3,600.00
Watchmen—2 at \$1,200.00	2,400.00
Janitors—1	1,500.00
Additional for repairs	5,000.00
Coal	5,000.00
Freight on coal	4,000.00
Electricity	4,000.00
Water	2,000.00
Maintenance of trucks	1,500.00
Miscellaneous	1,000.00
Total	\$30,000.00

These estimates are based on the additional needs due to the completion of the gymnasium and armory, the dairy building, the dining hall and the chemistry building to be completed in 1926 and an arts and library building to be requested for 1927-28.

COLLEGE OF EDUCATION

Maryland has in the past few years, as a result of careful planning and study, and legislative enactment, established its public school system upon a sound, modern basis. The State educational administrative machinery has been thoroughly reorganized. The normal school facilities have been expanded to care for the preparation of elementary teachers, and the College of Education of the University of Maryland has been organized and developed for the preparation of high school teachers, high school principals, vocational teachers, supervisory and administrative officers. To meet these needs, the College is organized into five functional divisions or departments: General Education, Arts and Science Education, Agricultural Education, Home Economics Education, and Industrial Education. The College was organized in 1918-19. It now registers 99 four-year students; 313 extension students, and 486 in the summer session.

The most urgent needs are for two additional critic teachers at \$2,000.00 each; an additional instructor in Trades and Industry at \$1,950.00 (balance from Smith-Hughes); increases in compensation to present staff (six), \$4,500.00; additional supplies and expenses, \$3,700.00, or a total of \$14,150.00 a year.

COLLEGE OF HOME ECONOMICS

This College was organized to provide the Home Economics subject matter for those specializing in Home Economics Education, and those who desire to become specialists in the general field of Home Economics, foods and cookery, textiles and clothing, institutional management, or in the management of the home. Many courses are open to election by women in other colleges. The College has supervising control of the dormitories and the dining hall. It is essentially the women's college of the University, though all other colleges are open

to women. It is in urgent need of suitable laboratories and classrooms, especially adapted to its requirements and for additional instructional help amounting to \$6,900.00.

HYGIENE AND HEALTH SERVICE

The College of Education and the College of Home Economics both require considerable instruction in hygiene and health as a part of their regular training. All students entering the University must have a health examination and record. This governs, to a considerable extent, their activities in the Military Department and in physical training. At present, the work is done by part-time help. The institution is now too large and the importance of the matter is too great to allow it to drift this way. A Director of this Department is necessary, with one assistant, and a registered nurse, amounting to \$12,000.00 for salaries and \$1,300.00 for supplies and expenses, or a total of \$14,100.00 in addition to the \$3,080.00 now available.

COLLEGE OF ENGINEERING

The work in engineering has been increasing rapidly. There were 103 students registered in 1919 and 203 in 1923. Special attention is given to highway engineering. The Federal Bureau of Roads and the State Roads Commission cooperate in the study of road construction and maintenance problems. Much valuable information in these fields has been obtained. There is also a strong demand for the work in mechanical and electrical engineering. Increases in salaries amounting to \$3,200.00 and additions to staff amounting to \$12,500.00, and supplies and expenses, \$4,320.00 are necessary to maintain the work on an efficient basis. Total increase required, \$20,020.00.

COLLEGE OF AGRICULTURE

The College of Agriculture works in close cooperation with the Experiment Station, Extension Service, and the Agricultural Control and Service branches of the State Department of Agriculture, Geological and Natural History Survey, and the Department of Forestry. This results in a large financial saving, but there is always the danger that the urgent demands of the farmers for service and control work will interfere with the teaching. On the whole, however, experience has demonstrated that this plan of organization is most economical and efficient. Through these various services the College of Agriculture is in close touch with practically every farm family and interest in the State. The improvements in crops and methods and marketing are annually returning to the State, on the most conservative estimate, more than ten million dollars. This is many times each year what the entire University has cost from all sources—State, Federal and private—since its foundation more than a century ago. This takes

no account of educational values and the training of men and women for all kinds of State service. Additional help is needed in agronomy, agricultural engineering, animal husbandry, entomology, horticulture, poultry husbandry, soils, bacteriology, and sanitation, aggregating \$34,000.00. Additional supplies and expenses aggregating \$15,000.00 are necessary. This makes a total of \$49,000.00 a year increase needed to put the work on the most efficient basis.

COLLEGE OF ARTS AND SCIENCES

All professional schools, including Agriculture and Engineering, now require approximately two years of standard arts and science as a basis for professional training. All of this, including the Baltimore branch of the University, is given or under the management of the College of Arts and Sciences of the University. Arts and science subjects in all of the four years in each college and in the Graduate School are provided by this College. More than 65% of the teaching load is thus carried for other colleges of the University. There is a rapidly increasing number of students registering in this College for arts degrees. This number will be increased when Hopkins drops its first two years of college work. The demands on this College have grown so fast that it has been difficult to keep up with them. Additions to the teaching force in nearly every department are necessary and some important fields are not now represented at all. At least twenty additional instructors are needed in this College at an average salary of \$2,000.00. Salary increases are necessary, if we are to keep our good men, aggregating \$12,000.00; supplies and miscellaneous expenses, \$23,000.00, or a total increase of \$75,000.00 is urgently needed.

The money available for maintenance in the Baltimore branch of the University as indicated above is:

School of Medicine.....	\$42,500.00
School of Pharmacy.....	10,000.00
University Hospital.....	47,500.00

The appropriation to the Hospital is in payment of part of the cost of care of State patients. These patients are a necessary part of the Medical School work. The Nurses Training School is run as a part of the Hospital and the educational costs are provided from Hospital income. The general receipts of the Hospital, including the State appropriation covering part of the cost of free State patients and payment by the City of Baltimore of part of the cost of free city patients, are just sufficient to enable the Hospital to meet expenses, which average about \$290,000.00 a year. The Hospital was greatly improved by the changes made to reduce the fire risk, from the \$75,000.00 appropriation for that purpose made by the General Assembly of 1924. The Women's Auxiliary Board has also made valuable improvements and additions to equipment. The general maintenance

costs of the Hospital cannot be considered in student per capita costs except so far as the nurses are involved. More money should be available for the purely educational training of the nurses apart from the strictly hospital aspects of their work. \$12,000.00 a year for this purpose is needed.

Of the \$42,500.00 appropriated to the School of Medicine, \$11,200.00 is for interest and sinking fund, leaving \$31,300.00 available for educational work, maintenance and operation of plant, etc. In addition to this, receipts from student fees average \$100,000.00 and available receipts from other sources will bring the amount available from fees and receipts for general maintenance to approximately \$110,000.00 a year, a total, including the State appropriation, of \$141,300.00, or a total per capita operating expense of \$399.00. \$88.00 of this now comes from the State and \$311.00 from student fees and other sources. The resident fee is \$250.00 and the non-resident fee \$300.00. This is as high as the students can pay and is much higher than the majority of State schools charge. It puts medical education out of the reach of many worthy students, especially many of those from the rural districts.

If we are to develop the medical teaching to the point of highest efficiency we must either increase the facilities for teaching or reduce the number of students. We should consolidate the teaching more at the main University center—Lombard and Greene Streets—increasing our laboratory and hospital facilities at that point and reduce the number of students to about 300, or about 50 less than at present. To do this would require an additional appropriation from the State of about \$15,000.00 a year to offset the loss from student fees.

The School of Pharmacy receives \$10,000.00 a year from the State beginning in 1924-1925; \$35,000.00 from student fees and about \$1,000.00 from other sources, making a total of \$46,000.00. There are now registered 228 students, or an average per student general carrying cost of \$201.00. Increased teaching facilities are urgently needed.

The School of Dentistry receives no appropriation from the State for general maintenance. It was allotted \$15,000.00 of an appropriation of \$40,000.00 for equipment available from the State Bond Issue of August, 1925. Receipts from fees amount to \$104,100.00, infirmary \$25,000.00, and miscellaneous \$300.00, or a total of \$129,400.00, an average general carrying cost of \$247.00 for the 479 students. At least \$20,000.00 a year in addition to this should be available. The number of students should be reduced to about 300.

The School of Law receives no appropriation from the State. Its annual income amounts to about \$50,000.00 largely from fees from 550 students, or \$90.00 per capita. At least double this amount should be available. This will require an increase in fees and help from the State, amounting to not less than \$25,000.00 a year. In order to com-

ply with the minimum requirements of the American Bar Association standards, more full-time teachers will be necessary and the work will have to be improved all along the line.

The School of Business Administration has, up to the present time, depended entirely on its own resources, which amount to about \$60,000 a year. 230 students are in collegiate courses and 390 in extension courses. In addition to income from student fees, the School needs about \$15,000.00 a year from the State.

THE EASTERN BRANCH

When the State accepted the Land-Grant Act of 1862, and the subsequent Morrill and Nelson Acts making funds available for teaching agriculture and the mechanic arts, an obligation was assumed of providing equivalent instruction for white and colored races. The work for colored students was placed at Princess Anne, Maryland, in cooperation with Morgan College. \$10,000.00 of the Morrill fund is allotted in accordance with the law, to the colored work and the State provides in addition \$18,120.00 a year for general maintenance. The State also purchased about 70 acres of land, with house and barn, and a temporary portable classroom building costing about \$3,000.00. Morgan College furnishes about 100 acres of land, with barn, chicken houses, hog houses, dining hall, superintendent's quarters, and dormitories for about 250 students. The assembly hall and boys' dormitory, the property of Morgan College, was destroyed by fire in 1924 and the Legislature of that year appropriated \$40,000.00 to replace it on a location deeded in fee simple to the State for that purpose. The building is now under construction. It was found, after securing bids, that a building only two-thirds the size required could be secured for the money available. It is recommended that the wing cut off be added as soon as possible, at an estimated cost of \$25,000.00. This will serve for the present as an assembly room and laboratory and dormitory for boys.

Additional dormitory space is urgently needed, but can be deferred by holding down registration. The work at Eastern Branch should be confined as largely as possible to work above the high school grade. In the past, students desiring to come to the school have not had standard high school work, but with the improvement taking place in the colored high schools we can limit more to college grade and thus reduce numbers; at least for the present.

The work at this School stresses agriculture and home economics, but the facilities in land, buildings, and equipment are quite inadequate for the proper conduct of the work.

The most urgent needs are:

Land	\$20,000.00
Farm equipment	3,000.00
Home Management House.....	15,000.00
Teachers Cottages.....	12,000.00
Barns	7,500.00
Livestock	3,000.00
Additional support for instruction and • supervision in agriculture.....	3,500.00

This School has never been put on a proper basis for the work required. Most of the States with large colored population have found it highly advantageous to give them good educational facilities. It makes them better citizens and more efficient workers.

A. F. WOODS,
Retiring President.

The College of Agriculture

To the President of the University of Maryland:

Maryland in common with other parts of the United States experienced a period of agricultural depression, following the World War. This condition in Maryland has not been as severe as in many other sections owing to the character of her agriculture and her geographical position in reference to markets and other agricultural and industrial activities.

These factors were reflected to some extent in the student enrollment and activities of the College of Agriculture. While there was some slight decrease in the number of students registered in this College yet this was largely due to the withdrawal of rehabilitation students assigned here by the Federal Board for Vocational Education, rather than to a direct lack of interest on the part of the citizens of Maryland in Agricultural Education or appreciation of agricultural opportunities.

The present indications point to a steady upward trend in agriculture in Maryland. Farmers and all business closely associated with farming can look forward, with reasonable confidence, towards prosperous returns.

DEMANDS FOR GRADUATES IN AGRICULTURE

The demand for men and women with a basic training in agriculture is far greater than the supply. New opportunities are opening up almost every day for agricultural college graduates in commercial and industrial fields which are dependent upon serving farmers for their success.

The positions open for trained teachers and investigators in Colleges, Experiment Stations, and the U. S. Department of Agriculture will take nearly 1,000 persons per year. The turn over in County Agricultural Agents in the United States will require almost 500 men; and about 1,000 per year are absorbed by the County High Schools. The Extension and Advisory Service of rural banks, advertising agents and specialists, feed and fertilizer manufacturers, spray material and machinery manufacturers and distributors; farm machinery and tractor manufacturers and distributors; farm papers, commercial and daily papers with farm departments; manufacturers and distributors of materials for farm buildings and roads are all seeking the services of men and women trained in scientific agriculture, agricultural economics and sociology.

The positions in these fields will usually start an employe at from \$1,200 to \$3,000 per year and offer opportunities for fairly rapid advancement to \$5,000 to \$10,000 per year dependent upon individual ability and type of position.

The man with sufficient capital at his command to farm for himself or manage large estates also has opportunities for remuneration commensurate with the returns received for equal efforts put forth in other fields.

HOW AGRICULTURAL COLLEGE GRADUATES ARE EMPLOYED

(Graduates 1918-1923, Inclusive.)

On the farm.....	30%
In commercial business (general and allied to agri.).....	18%
In U. S. Department of Agriculture.....	18%
College teaching and investigation.....	15%
County Agricultural Agents.....	9%
Teachers in high schools.....	6%
In non-agricultural work.....	4%

NEED FOR EXPANSION

In order to meet the demands brought about by the conditions enumerated above it will be necessary to enlarge and broaden the scope of the work of the College of Agriculture; add new courses; new departments, and greatly increase the facilities and teaching force. Additions to this end have been made during the past three years to as great an extent as the funds available would permit; but much remains to be done to fully provide for all that is desired and to do thorough and efficient work.

BUILDINGS AND LAND REQUIREMENTS

General Statement—Most of the departments of the Experiment Station and the College of Agriculture could use more space to advantage. At the present time some of the departments are scattered in several buildings. This condition militates against efficiency and economy.

Most of the members of the Station Staff and the College Faculty believe that the first and principal effort of every one should be centered on securing a new building to house the general administrative offices; the College of Arts and Sciences and the College of Education. Such a new building with existing buildings would probably enable all the departments (not agriculture) temporarily quartered in the Agriculture Building to move. The Agricultural Building would then provide satisfactorily for the immediate requirements for offices, laboratories, classrooms, etc., for all of the Agricultural departments of the University. The College of Agriculture is much in need of a small

office for each worker. This would increase efficiency and be helpful to both teacher and students.

The full development of the work of the Department of Horticulture, Forestry, Bacteriology, Animal Pathology and the Biological Sciences will soon require special buildings. These buildings should be provided just as soon as conditions and circumstances would warrant.

LAND

The farm land owned by the University has been reduced, by taking off for building, campus, athletic field, etc., until the area available for general crops and investigation purposes is only about 100 acres.

Much more land could be used to advantage. The Animal Husbandry departments should have about 500 acres and other departments could profitably use 500 acres, or a total of 1,000 acres. More land should be obtained at once if the work of the College of Agriculture is to be developed and made as efficient as is desired by all interests.

MONEY NEEDED

The College of Agriculture needs larger allotments of funds for salaries, equipment and traveling expenses. This is necessitated by the higher scale of salaries which prevail all over the United States in all classes of college positions, but particularly so for men trained in Agricultural subjects. More courses must be offered. This requires more men and facilities. More money should be available for travel so as to enable the men to render a greater service to the people of the State, and also attend some of the national meetings in their respective fields so as to keep abreast of the times.

Agricultural Chemistry—Logically and for the proper coordination and correlation of the work there should be a department of Agricultural Chemistry in the College of Agriculture. This will probably become more and more desirable as the different colleges grow. This would also seem to be in line with the policy already established of having departments of Agricultural Engineering and Agricultural Economics in the College of Agriculture.

This is mentioned at this time not because of any dissatisfaction with the present arrangement, but simply because it would be desirable to consider this department in any plans which are made for future housing. At present the work in Agricultural Chemistry is largely housed at the Experiment Station and Dairy Buildings.

It may also be necessary in the near future to decide whether it would not be more logical to have the fertilizer, lime and cattle food inspection work located in the College of Agriculture than in the Col-

lege of Arts and Sciences. If so, this would figure in the future housing plans.

The work, progress and needs of the various departments are set forth in the following summaries:

Agricultural Economics—This department was organized and began work in August, 1922. It has made real progress, rounded out and filled an important place in the courses offered and developed a program of distinct service to the State. The head of this department divides his time between teaching, research and extension. All phases have developed so that there should be provided an associate who would give full time to teaching and an associate who would devote all his energies to extension.

Efficient teaching would be promoted by assigning a class room to this department where some permanent material could be installed and where data could be placed on the blackboard and allowed to remain for several days in succession.

Agricultural Engineering—This department occupies about 2,500 square feet as a farm machinery laboratory. For the full development of the instruction in farm shop work, home lighting, heating, water supply, and sanitation systems about 1,500 square feet additional is needed.

This department should also have an office which would also serve as a safe storage of some of the smaller and more valuable instruments and supplies. The work in all branches has increased to such an extent that an assistant should be provided as soon as possible.

Agronomy Department—This department could handle its work to better advantage if the offices, laboratories and class rooms were not so much scattered as at present.

For the better development of the work in forage crops, tobacco, genetics and crop breeding more space should be available for laboratories. The grain judging and testing laboratory which are now on the second floor, should be on the ground floor. The work of this department could all be nicely housed and provided for in the rooms in the east one-half of the basement of the Agricultural Building when the present occupants of these rooms are provided for elsewhere.

The investigational work of this department should have from 150 to 200 acres more land for seed breeding and multiplication in order to render the farmers of the State the maximum service.

The inventory for this department gives an equipment valued at \$3,552. There is an immediate need for at least \$2,000 more for equipment and apparatus for the crop production and grain grading laboratory. This should be supplemented with an allowance of about \$500 per year for some years to come.

Animal and Dairy Husbandry—The dairy departments are well supplied with laboratories and class rooms but need more office space.

This can probably be supplied by rearranging the building. The dairy laboratories need much more equipment of a size suited for instructional work.

The course in stock judging, meat and meat products should be provided with better facilities and equipment. The size of classes in these courses is growing rapidly.

The teaching and investigational work in Animal Husbandry cannot be satisfactorily or fully developed until more land, barns and livestock is provided.

This department should have the following:

Beef cattle, hog and sheep farm with building.....	200	acres
Holstein dairy farm with building.....	75	"
Jersey dairy farm with building.....	75	"
Guernsey dairy farm with building.....	75	"
Ayrshire dairy farm with building.....	75	"
Total.....	500	"

The barns now on hand are needed and could be used to best advantage as laboratories for investigational work in animal feeding and production.

Animal Pathology and Bacteriology—The demands upon this department for both instruction and investigation have grown rapidly. Instruction is given in general bacteriology and the courses are arranged to meet the needs of all departments of the University. The present laboratories are not large enough to accommodate some classes. In some cases work must be repeated three times in one semester. This is not economical of the time of teachers. This has caused the department to outgrow the present assignment of rooms. More space must be provided, especially for student laboratories. This department prepares and distributes legume inoculum, tuberculin, and hog cholera serum to the farmers of this State. These are furnished at cost. The demand for these products is very large and requires an increase in the facilities for preparation. Some of the work of this department could be handled more efficiently on the ground floor than on the third floor as at present. The diagnosis laboratory which is maintained for State work should occupy a space by itself and be so located that the odors which emanate would not annoy other workers or occupants of the building.

The full development of the work in all phases of bacteriology and animal pathology will ultimately require a special building which will provide from 15,000 to 18,000 square feet of floor space. Tentative plans for such a building have been worked up by this department in cooperation with the General Service Department. Such a building should be provided as soon as feasible.

Veterinary Department—This department should have better facilities than at present and should be provided for in any building program of the Animal Pathology Department.

Botany and Plant Pathology—The botanical work at present is meeting the major demand in an institution such as this and lays particular emphasis on the physiological and pathological side. The space, equipment and teaching force should be increased so that more time could be devoted to structural and other aspects of botany. These phases of botany are much needed by related plant science departments.

The additional space needed to take care of normal growth in these departments can be provided in the Agricultural Building when other departments move to the Arts, Science and Educational Building.

The efficiency of these departments could be increased if they were all housed in one building and on one floor. These departments need much more greenhouse space than there is available now. The greenhouses for disease work should be isolated from the horticultural ranges so as to remove danger to regular crops. This department needs more laboratory assistance and clerical help.

Farm Forestry—The State Forester, Dr. F. W. Besley, offers courses in farm forestry to students in the College of Agriculture. This subject is of vital importance to most every farm.

In order to do efficient work and develop specialized and elective course in forestry the department must be provided with laboratories, class rooms, offices, equipment and forestry lands at or near College Park. These facilities should be provided as soon as possible.

Farm Management—The courses in farm management are designed to take the students in their senior year and aid them in properly correlating the work of the several technical courses which they have had and adapting them to their own special needs and conditions. The work given in these courses prove exceedingly important in developing good and successful farmers, farm managers, County Agricultural Agents and agricultural teachers. The work in farm management needs more material and facilities for its full development.

Entomology—The space needed by this department to take care of normal growth can be provided in the present building (Morrill Hall) when the rooms now occupied by the Arts and Science Colleges are vacated. One of the future needs of the University will be a building for the biological sciences. This should be provided as soon as feasible.

The demand for instruction in apiculture is growing and the interest in bees in the State would warrant the employment of a full-time assistant professor in this subject.

Horticultural Department—This department is working at some disadvantage in being housed in several buildings at some distance apart. More offices, laboratories, class rooms and greenhouses space

is needed. The investigational work should be provided with a farm of 30 to 50 acres in a market garden section of the State with the type of soil most usually preferred for such crops and also a farm of 40 or 50 acres for orchard fruits in the typical fruit belt.

This department is much hampered in its work by lack of fruit and vegetable packing and storage facilities.

This department should be provided with a special building as soon as it would seem feasible to do so.

The Department suggests the need of a building 50 feet wide and 85 feet long. This should consist of a basement and two other floors. If it is desired to have Forestry in the same building a third floor can be built for that Department. This would not be an extravagant request, since the Horticultural Building in Ohio is 56 feet by 250 feet—the one in California 60 feet by 173 feet—the one in Oregon 68 feet by 125 feet, and the one in New Jersey built only three years ago, which is now outgrown, 40 feet by 75 feet. The new Horticultural Building in Indiana, built in 1925, contains 25,000 square feet.

A building 50 feet by 85 feet of three floors, equals 12,750 square feet, as requested, would supply the following rooms for the Horticultural Department:

1. *Basement Floor:* Systematic Pomology room, 20 ft. x 36 ft. General sales room for horticultural products, 14 ft. x 20 ft. Fruit cold storage room, 14 ft. x 20 ft. Vegetable storage room, 11 ft. x 20 ft. Engine and machine room for storage, 10 ft. x 20 ft. Bi-products teaching and research laboratory, 20 ft. x 30 ft. Lavatory, 10 ft. x 20 ft.

2. *First Floor:* Seven offices, approximately 10 ft. x 20 ft. Two persons per room. Horticultural research laboratory, 20 ft. x 30 ft. Special private research laboratory, 7 ft. x 20 ft. Class room for large elementary classes, 20 ft. x 30 ft.

3. *Second Floor:* Landscape drafting laboratory, 20 ft. x 30 ft. Vegetable gardening class room and exhibit room, 20 ft. x 36 ft. Departmental library, 15 ft. x 20 ft. Two lecture and class rooms, 20 ft. x 27 ft. One general seminar room, 15 ft. x 20 ft. If this building is secured, about \$25,000 will be required for equipping it, exclusive of cold storage plant, which would cost an additional \$15,000.

This department should be provided with another range of 10 greenhouses (20' x 50' each) in order to meet the increased demands for instruction in these subjects.

Plant Physiology—This department needs more equipment in order to take care of the increased demand for instruction in general biochemistry. Many graduate students are majoring in Plant Physiology and most of the students majoring in horticulture, agronomy, soils, bacteriology and some in Animal Husbandry, Chemistry and Entomology are taking this subject as their minor.

The immediate needs for the normal growth of this department will be taken care of in the new Science or Chemistry building which is already provided for. More greenhouses should be provided for this department.

Poultry Husbandry—This department has been greatly strengthened during the past two years through the addition of an assistant who makes teaching his major project and the addition of class rooms and equipment facilities. The installation of a plant for the State Egg-Laying Contest has also served for enlarging the facilities for instruction.

Poultry and poultry products represent a large and important industry in Maryland. This department desires much larger and better facilities and equipment than it possesses at present. The annual returns from poultry in Maryland is larger than from the dairies.

This department should be provided with a special building for laboratories, class rooms, offices, poultry houses, incubators, feed storage, quarters for attendants, etc., and much more for maintenance than is now available. A minimum of \$25,000 should be provided at once and \$100,000 could be used to advantage and with profit to the industry.

Seed Inspection—The seed inspection department collects and analyses samples of most of the agricultural seeds exposed for sale in this State and also examines many hundreds of special samples submitted by farmers. The relation of good seed to crop yields is becoming recognized more and more each year. This makes more demand upon this department which will necessitate a larger equipment. Maintenance funds are inadequate.

This work should be housed in a more substantial building and in better surroundings. There would be some advantage in having it located near the botanical group. This work will probably have to be continued in its present location for several years. This department should be equipped to take care of some much needed research in this field.

Soil Department—The present space for offices, laboratories and class rooms is adequate for the work in hand, but it could be done more economically and efficiently if brought together in one building. This can probably be accomplished when a new building is provided and other departments vacate the space they now occupy in the Agricultural Building.

There should be provided as early as possible 2,000 square feet additional greenhouse space for this department. There should also be provided for the Soils Department about 50 acres more land near the University.

This department should have an increase in the allowance for teaching work in order to take care of salaries and a reasonable amount of expansion, provide for replacement of worn-out equipment and the purchase of some new and improved types of apparatus.

Acknowledgement: Appreciation is hereby expressed to the members of the faculty who in the midst of financial limitation have been cheerful and done their best with the facilities provided. The work accomplished has been good and satisfactory to all concerned in quality and quantity. The spirit manifested by the staff has been fine.

I also wish to express to the President the appreciation of the faculty of the College of Agriculture for his constant interest in our problems and for the help which he has always extended.

Respectfully submitted,

H. J. PATTERSON,

Director and Dean.

The Agricultural Experiment Station

To the President of the University of Maryland:

The Experiment Station has completed thirty-eight years of service. The applications made of the results obtained during this period are contributing several millions of dollars annually to revenues of the farms of this State. Money expended for investigating agricultural problems has proven a good investment in Maryland as the yearly returns are several times as much as the gross cost for the whole thirty-eight years. Many farmers are profiting from the results of this Station's work without realizing the source of the information they are using. It is a regrettable fact that there are many farmers who do not know of the Experiment Station and its work and who are not profiting by the results and practicing better methods in their farm operations. This condition will gradually disappear as the educational movements and activities with boys and girls throughout the rural sections will ultimately reach most every farmer either directly or indirectly.

The details of the Station's activities and projects under way have been given in the 38th and 39th annual reports. In addition to the work conducted at the Station at College Park there are investigations in progress at 58 points throughout the State. These may be summarized as follows:

AGRONOMY DEPARTMENT

1. Variety tests of corn, wheat and soy beans at Ridgely, Caroline County; Sparks, Baltimore County, and La Plata, Charles County. At Ridgely the soy beans are grown for seed. At each of the other places, the soy beans are grown for hay. In addition, a comparative test of wheat yields following corn and soy beans are being made at both Sparks and La Plata.

2. Adaptability studies in wheat. In these tests a direct comparison is being attempted between growing the fulcaster and the fultz types of wheat on high land and low land. These tests are located near Ringgold and along Beaver Creek in Washington County.

3. Variety grass tests. The purpose of these tests which are being conducted at Flintstone and Rawlings, Allegany County, is to determine which of the pasture grasses and legumes are most satisfactory and best adapted for pasture purposes on the mountain sides in Allegany County. There are 21 one-twentieth acre plots in each of these tests.

4. Sugar corn breeding. The sugar corn breeding consists of selfing and out-crossing of self strains. Direct crosses between various kinds of sugar corn and crosses between sugar corn and field corn, and also detasseling and selection. The purpose of securing more uniform ripening in canning corn. The work is being conducted on three different farms near Mount Airy, Carroll County, and at Beltsville, Prince George's County.

SOILS DEPARTMENT

Fertilizer, lime, stable manure, green manure and drainage tests are under way at the following points:

Leonardtown, St. Mary's County.
La Plata, Charles County.
Port Tobacco, Charles County.
Cheltenham, Prince George's County.
T. B., Prince George's County.
Upper Marlboro, Prince George's County.
Sparks, Baltimore County.
Back Bay Sewage Disposal Plant, Baltimore County.
Downsville, Washington County.
Chestertown, Kent County.
Ridgely, Caroline County.
Princess Anne, Somerset County.
Snow Hill, Worcester County.
Pocomoke, Worcester County.
Beaverdam, Worcester County.

HORTICULTURAL DEPARTMENT

The relation of fertilization, culture and pruning to bi-annual bearing habit at Hancock, Washington County.

The fertilization of apple orchards at Salisbury, Wicomico County; Hancock, Washington County; Colesville, Montgomery County; Berlin, Worcester County; Mount Airy, Carroll County.

The fertilization of peach orchards at Salisbury, Berlin, Mount Airy and College Park.

The fertilization of strawberries at College Park, Ridgely, Salisbury and Marion.

The influence of pollination on fruit yields at Hancock, Salisbury and College Park.

The rejuvenation of peach trees at College Park and Smithsburg.

Peach tree pruning at College Park, Salisbury and Mount Airy.

Variety tests of grapes and strawberries at College Park, Beltsville and Salisbury.

Time for planting late potatoes at Bel Air, Marion and College Park.

Influence of temperature on growth of peas at Ridgely.

Fertilizers for rhubarb at Chillum, Prince George's County.

Breeding and selection of varieties of tomatoes for disease resistance and for canning in Harford, Cecil, Caroline, Dorchester and Talbot Counties.

Tests of varieties of spinach for canning, Worcester and Prince George's counties.

Development of disease resistant strains of peas in Talbot, Carroll and Garrett counties.*

DEPARTMENT OF ENTOMOLOGY

1. Dusting or Control of Apple Insects and Diseases—Snow Hill, Hagerstown and College Park (Eversfield's).

2. Spraying for Control of Scale Insects and Peach Leaf Curl—Parsons Island, Queen Anne's County.

3. Spraying for Terrapin Scale—Halethorpe.

4. Biology of Tuber Moth—Snow Hill.

5. Dusting and Spraying Certified Potatoes to Prevent Dissemination of Mosaic by Aphids—Snow Hill.

6. Dusting Cabbage for Control of Flea Beetles—Insecticide Testing—Ednor.

7. Insecticide Testing in Conjunction with American Cyanamid Company—Berlin, Snow Hill, Hurlock, Salisbury, Cumberland, Baltimore, Princess Anne, Sandy Springs and Marion.

8. Oriental Peach Moth—Smithsburg.

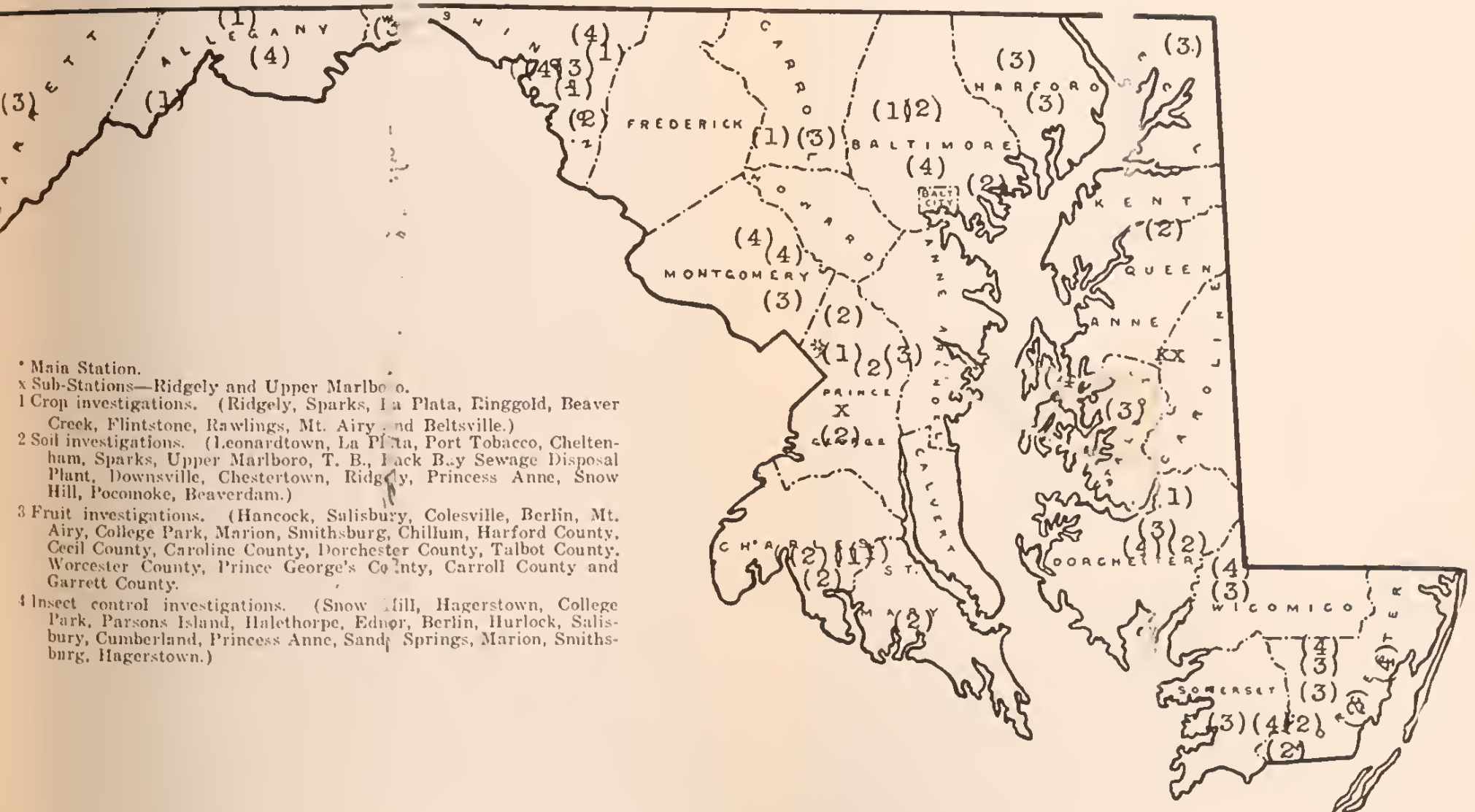
9. Rosy Apple Aphis—Hagerstown.

Besides these isolated experiments which occupy from one to twenty-five acres on rented land the Experiment Station owns a farm of 50 acres at Ridgely in Caroline County and leases two other farms; one of 70 acres at Upper Marlboro devoted to tobacco investigations, and one of 60 acres at Beltsville devoted to the breeding of sweet corn, and the investigations for the control of the corn ear worm.

An idea of the location of experiments in all parts of the State may be gained at a glance from the attached map.

The location of experiments in the various sections of the State permit the work to be done under the condition most prevalent with a given crop, but it also places the work within easy reach of the people specially interested in the results. This enables the growers to visit and see the results from time to time. This is much more effective in securing the interest of the farmers and inducing them to put the results in practice.

MAP SHOWING WORK OF EXPERIMENT STATION IN DIFFERENT COUNTIES



NEEDS OF THE STATION

New problems are constantly coming to the Experiment Station for solution. The attempt to meet this condition has caused the staff to undertake more than facilities and resources justify. If future demands are to be met the Station must have more men, more land, more buildings, more equipment and more money.

For both educational and investigational work land and barns are needed at College Park for all phases of Animal Husbandry. A small farm with sandy soil in the typical market garden area is needed for vegetable gardening experiments. Also a fruit farm in the fruit region could be used to advantage.

Present conditions make it necessary to practice extreme economy and give less time than desirable to many lines of research.

The results obtained in the past are paying a big dividend annually upon the amount expended for agricultural research.

The future would seem to offer hopes of still greater rewards and justify larger expenditures.

Money invested in research is a business proposition which should be considered on its merits. Maryland has great undeveloped resources in her soils and waters and it would seem a wise business policy to supply money for research which would increase and conserve their productive capacity.

Respectfully submitted,

H. J. PATTERSON,

Director.

The College of Arts and Sciences

To the President of the University:

Since the last biennial report was submitted for the College of Arts and Sciences the enrollment in this College has increased over 50%. With 301 students in the academic year 1923-24, the enrollment in this College at the end of 1925-26 reached 456. Not only has this increased enrollment placed new burdens and responsibilities upon the faculty and administrative officers of this College but at the same time it has been carrying an increasing load of work for the other Colleges of the University. Furnishing from 65 to 80% of the course work for the other undergraduate colleges at College Park, it has also carried some 60% of the courses taken by the graduate students of the University who are enrolled in the Graduate School.

In the tri-ennium under discussion the curricula of both the School of Dentistry and the School of Pharmacy have been reorganized, making virtually two years of the four-year Pharmacy course and two years of the five-year Dental course work in Arts and Science subjects, taught and directed by the faculty of this College. The Schools of Law and Nursing have likewise revised their programs of study, and combined courses in Arts and Law and Arts and Nursing have been established. The School of Law, by requiring one year of Arts work for all of its entering students next September, and two years for all who enter the following year, has thereby appreciably raised its standards and has thereby created a greater demand within the University for work of an Arts and Science character.

Thus, the College of Arts and Sciences is more and more taking its place, which similar colleges have taken in all of the larger universities, as the center around which are grouped the professional and technical Schools of the University. Its work forms the foundation upon which these professional and technical curriculums are based. Hence, it is vitally important that this foundational and cultural work be kept at the highest possible standard.

In the departmental organization of this College the aim has been to strengthen existing departments rather than to branch out in new lines. Consequently, with the increasing student body, the emphasis has been placed upon the instructional force. Two new professors were added in Chemistry, one in History, and one in Economics, with an associate professor in Modern Languages, an assistant professor in English, an assistant professor in Zoology, and a few instructors in Chemistry, Sociology and English, nearly all of whom have their doctorate degrees. The increase in staff, however, has by no means

kept pace with the increase in student body. Certain Departments which ought to offer more well-rounded programs of work are still only in embryo and the offerings in these fields are consequently very meagre. Greater demands are being made for more courses in Philosophy and Ethics and in the Classical Languages than are being given. If our graduates are to be prepared to teach Languages or English some advanced courses in the Classics are essential.

Likewise this College has completely outgrown its class room and laboratory space and equipment. The completion of the new Science Building during the next year will help this situation somewhat, but more class rooms, particularly lecture halls for larger classes, laboratories and laboratory equipment are vitally needed. The lectures in Freshman Chemistry and in Social Science during the past year had to be given in the Assembly Hall, in one of which classes over 200 students were assembled and in the other nearly 400. The Assembly Hall is obviously very poorly equipped for class room use, yet it has had to be in almost constant use for this purpose during the past year. The completion of a new Administration Building with class rooms and offices for the work of this College is an imperative need.

A gratifying development among the faculty of this College is the outstanding achievements of several of its members in the production of textbooks and other books and articles which have attracted national and international attention. Dr. Niel E. Gordon's text on "The Project Method in Chemistry;" the "Handbook of Correct English," by Dr. House and Dr. Harman of the English Department; Dr. A. E. Zucker's work in comparative literature on "The Chinese Theater," and the handbook of the writer on "Currency, Banking and Finance in China," all of which have come out during the past year are examples of this sort. Dr. Hayes Baker-Crother's book on the "Problems of Citizenship" is now being used in more than forty universities and colleges as a text.

For the immediate future the outstanding needs of this College, in addition to the need of class room space and laboratory space and equipment above indicated, are as follows:

I. An Adequate Salary Scale—With the phenomenal growth of student bodies throughout the country, the demand for alert, well-trained teachers far exceeds the supply. In addition, following the testing university men were given during the World War, more and more university teachers are being called into industry, finance and professional services than ever before. To meet the competition of other universities and colleges where measurably adequate salary scales have been adopted, if we are to hold our good men, some definite and forward steps must be taken in the matter of University salaries. During the past year one of our leading professors resigned to take up an industrial position

with a salary of eight thousand dollars, whereas the University was paying him less than half that. Another professor of the same department refused a three-year contract at ten thousand dollars a year in order to remain in university teaching work. Another head of a department receiving less than four thousand a year, recently declined an offer from one of the best colleges of the country which was willing to pay six thousand dollars for his services, because he believed in the future of the University of Maryland and believed that this University would take adequate steps to better conditions in this regard. Many such men cannot be kept in the University unless some adequate salary scale is adopted. As has been recently pointed out, "What the true university teacher covets is not a highly remunerative personal compensation, but a salary that will give reasonable comfort to himself and family, spare him of the anguish and humiliation of debt, provide for the education of his children and for his own advanced years, and allow him freedom and opportunity to develop the field of teaching and research which most fully represents his capacity and enthalls his imagination."

II. Greater Library Facilities—A new Library Building or a Library wing on the proposed new Administration Building is a vital necessity of the work of this College. The present space and equipment is altogether inadequate for the present needs of this College. In addition, funds should be provided for the creation or improvement of Departmental Libraries for such large departments as the Departments of English, Chemistry, History, Zoology, Modern Languages, Sociology and Economics, etc.

III. Additions to the Teaching Staff—While the student body has increased in this College by over 50% during the past three years the net increase in the teaching pay-roll budget has been less than 10%. At least two professors, three associate professors, and some ten or twelve instructors are urgently needed in the work of this College in order to maintain its standards and to measurably meet its present requirements.

Respectfully submitted,

FREDERIC E. LEE,
Dean.

The School of Business Administration

To the President of the University:

A final report needs to be made on the work of the School of Business Administration. Organized as a group of Extension Courses in Commerce in Baltimore in the fall of 1921, the work in this field soon became unwieldy, due to the large number of students who desired to take such courses in the University. Without State support, without adequate space other than in rented quarters in a congested area of the city where rents were high, without income other than from student fees, the work in this field could not be maintained other than by the accumulation of an increasing deficit. In the meantime, the School of Commerce had been organized from these Extension Courses.

In 1923, the writer was made Advisory Dean of this School, then nearing the end of its second year of operations. Plans were made to curtail the expansion program of the School which were partly carried out. But by the practice of continuing small classes in essential subjects with the expectation that they would eventually build up, this School found itself with an increasing expenditure even in spite of a rapidly increasing student body. The nominal enrollment for 1924-25 was over 650 students. The last General Assembly had been asked for an appropriation of \$15,000 a year to provide for the administration, and the overhead of this School, but nothing was granted.

In the spring of 1925, with some three hundred students to whom the University had promised the opportunity of securing a degree, a complete reorganization of the work of this School was undertaken. A new dean was appointed and the program of the School again curtailed with the standards in the work to be given decidedly raised. The budget of the School was decreased by over \$20,000. More desirable quarters were rented adjacent to the University. On the higher plane some 325 students enrolled for the work of the School, but such a number was inadequate, without some State or University support to meet the minimum financial needs in the situation.

During the past academic year it was decided to discontinue the day work of this School and by arrangement with Johns Hopkins University provision was made whereby matriculated students who had completed two years or more of their college work in the University of Maryland in day or evening classes might continue their work in the Johns Hopkins classes, and upon the completion of prescribed programs of study be entitled to their degrees from the University of Maryland. Provision was made also for full-time students to continue their course at College Park by the re-establishment of a curriculum

in Business Administration in the College of Arts and Sciences. By this consolidation of the work of this School with the Evening Courses in Business Economics in the Johns Hopkins University, provision was made also for all matriculated students of the School of Business Administration to transfer their credits to the Johns Hopkins University and become candidates for the Bachelor of Science degree there.

Thus, by this merger of the work of the two Schools and by the re-establishment of a curriculum in Business Administration at College Park, the University's obligation to the students who had matriculated for a degree has been satisfactorily met, and the University freed from the necessity of continuing the operation of this School under existing circumstances.

If, as was stated in the conferences with the officials of the Johns Hopkins University prior to this consolidation, that University should decide to withdraw from this field itself if and when its announced plans are carried out, the University of Maryland might then very logically be the legatee of its work just as now Johns Hopkins becomes the legatee of the student body of this School. If such a contingency arises, however, assurance of State support adequate to cover building needs and the cost of administration should be secured before operations are resumed.

Respectfully submitted,

FREDERIC E. LEE,

Executive Dean of the University.

The College of Education

To the President of the University:

Within the past twelve years Maryland, as a result of careful study and planning and legislative enactment, has established its public school system upon a sound modern basis. Practicable educational standards have been set up and the machinery for educational administration has been reorganized. The normal school facilities have been expanded to provide for the preparation of elementary school teachers. The College of Education in the State University has been organized and developed to serve the following classes of students: (1) those preparing to teach agriculture, home economics, industrial subjects, and the arts and sciences in high schools; (2) prospective high school principals, educational supervisors and school administrators; (3) those preparing for educational work in the trades and industries; (4) county agents, home demonstrators, boys and girls club leaders, and other extension workers; (5) students majoring in other lines who desire courses in education for their informational and cultural values. To meet these needs the College is organized into five functional divisions or departments: General Education, Arts and Science Education, Agricultural Education, Home Economics Education and Industrial Education. The University of Maryland through the College of Education is exclusively responsible within the State for the training of teachers of vocational agriculture, home economics and the trades and industries under the provisions of the Smith-Hughes Vocational Education Act.

The Summer School, although organically distinct from the College of Education, is administered by the Dean of the College of Education and is in effect, an administrative division of the College.

Supervised Teaching—Actual experience in teaching under competent supervision is of basic importance in the preparation of teachers. Since 1920 a cooperative arrangement with the Prince George's County School authorities has been in effect whereby students preparing to teach get this experience in the Hyattsville High School under instructors employed and paid jointly by the school board and the University. At first only a small group of students preparing to teach vocational agriculture was involved. In 1922-23, there were 14 student teachers representing preparation in agriculture, home economics and English. In 1925-26 there were 45 students representing in addition to the above mentioned subjects, history, mathematics and high school science.

In the last biennial report I summarized this situation as follows: "Up to the present time the plan has proved satisfactory to both parties. It should continue to operate satisfactorily for the next two or three years at least. Whether it is permanently workable and desirable should be demonstrated within that period. There are two difficulties in the way of complete success. (1) The high school is more than two miles from the College. Students have to pay two car fares each way and then walk nearly a mile at each end. This levies an unfair tax, both in time and money, upon the students. If expeditious transportation can be furnished, this difficulty will be eliminated. (2) The second difficulty, inherent in the situation, is the dual administrative responsibility involved. This was negligible when only a handful of students and only one or two departments and instructors were concerned. With the increasing number of students, increasing variety of subjects and larger numbers of teachers, a complex administrative situation develops. The problem is not unsolvable by any means, but the time and diplomacy required to operate effectively may be too high a price to pay for the obvious benefits of such an arrangement. The two considerations, supplemented by the fact that the training school is the very heart of a successful teacher-training program, may make it desirable and necessary to establish a University high school on the campus in the not distant future."

The desirability of a high school under our own direction where our students may receive their practice experience in teaching is becoming more and more evident. In 1922-23, we had but 18 senior students for whom practice teaching had to be provided. In the present year, 1925-26, we have 45. The waste of time noted above is becoming more and more burdensome.

Furthermore, the growth of population in the large district served by the Hyattsville High School is so rapid that the new addition to the Hyattsville High School will not take care of this increase for more than two or three years. This school will be full up to its capacity within the next three years. Additional high school facilities will have to be provided.

The objects of the College of Education can best be served by a high school established and operated as an integral part of the College. This school should accommodate three hundred (300) pupils. It should specifically take care of *all the high school pupils in Vocational Agriculture and Vocational Home Economics* in this part of Prince George's County. A careful survey of the situation shows the aggregate number of such pupils will not be in excess of eighty (80) within the next ten years. The advantages of close proximity to the University resources in Agriculture and Home Economics are self-evident. This would leave space for two hundred and twenty (220) pupils in the general high school branches. This number will be sufficient for the teacher training requirements of the College of Education.

Enrollment and Personnel—The growth of the College since its inception in 1817 has been gradual and healthy. The following summary shows the increase in enrollment biennially to 1923 and annually in the past three years.

ENROLLMENT

Year	College	Extension Course	Summer School	Degrees Conferred
1918-19.....	14	.....	.....	3
1920-21.....	39	.....	208	5
1922-23.....	75	121	446	15
1923-24.....	81	139	452	21
1924-25.....	99	85	454	20
1925-26.....	118	146	477	25
1926-27 (To Jan. 1, 1927)	124			

The enrollment figures, however, do not tell the whole story, inasmuch as students enrolled in other colleges may and do pursue the curricula of the College of Education. In the past year (1925-26) the enrollment in the College of Education was 118 distributed as follows: Agricultural Education, 11; Arts and Science Education, 87; Home Economics Education, 20. Actually there were 40 students pursuing the curriculum in agricultural education and at least 15 pursuing the curriculum in Arts and Science Education. The amount of teacher-preparation service rendered is considerably greater than is shown by enrollment figures—and it is *this service* to the State for which the College exists.

Since the last biennial report was rendered, the following additions have been made to the faculty: A full-time instructor in educational psychology who also gives courses in general and social psychology in the College of Arts and Sciences; a full-time instructor in education and supervising teacher of history under the cooperative arrangement with the Hyattsville High School; and a full-time supervising teacher of mathematics and science under the same arrangement. The net increase is two, as work previously assigned to two instructors, is now distributed to four. These staff additions have taken care measurably of the increase in number of students and in variety of subject demands to be met. Necessary additions to personnel are shown in connection with departmental summaries.

Department of General Education—The term general education is used to designate the courses in education that are fundamental in the preparation of all teachers whether they be teachers of the customary high school subjects or teachers of the newer high school subjects such as agriculture and home economics; and also the advanced work in educational psychology, administration and research. Attention was called in the last biennial report to the demand for work in elementary education beyond that furnished by the Normal School. The demand comes from graduates of the Normal Schools who have been

teaching two or more years and who need further instruction in preparation for positions as county supervisors, helping teachers and elementary school principals. Recently a new demand has arisen from teachers of this type who wish to continue as elementary school teachers and for whom a higher grade of certificate on the basis of merit and advanced study will be necessary. The summer school opens the door of the College for many students of this type. Many such are registering as degree students, getting part of their courses in the summer school and spending a year or more in regular residence at the College. The last two sessions of the summer school have emphasized heavily this phase of our work. A definite post-normal school program leading to a degree in elementary education is urgently needed. To meet this need a professor of elementary education must be provided.

The demand for graduate work in education described in the last biennial report has continued and increased during the present triennium. This demand comes chiefly from teachers in service who wish to qualify for high school principalships and other supervisory positions in the public schools. At the present time 36 such students are registered in the graduate school. They will take most of their work in the summer sessions but the direction of their studies falls upon the regular instructors.

This, in general, is the layout of the work of the department of general education. The department is under the direction of the Dean (Professor of Education), but all members of the faculty assist in carrying out the instructional program, each member giving the courses he is qualified to handle. The addition of a full-time instructor in psychology has enabled the department this year to give two additional courses formerly given only in the summer. Two new courses have been introduced this summer and they also are to be offered in the regular term.

For the past two years the University of Maryland has been cooperating with a number of leading colleges and universities of the country, under the auspices of the National Council on Education, in the development of a series of psychological tests for freshmen. While still in the experimental stage these tests have already been of considerable value in helping to determine the cause of various maladjustments. As the tests improve and the meaning of the test results become better known it is hoped that we may be able to take a reliable inventory of new students during the first week of their attendance. The operation and the expense of this service for the benefit of all the colleges has been carried by the College of Education. In carrying out this program, additional clerical help is needed to make the test results more readily available.

Arts and Science Education—The special training of students preparing to teach the arts and science subjects in high schools is carried

on as a sub-division of the department of General Education. At the time of the last report 39 students were enrolled in this department. At the present time 93 are enrolled, of whom 30 are seniors. Three supervising teachers, employed jointly by the College and the County School Board constitute the present force for handling the special methods and practice teaching. One of these instructors, Mr. E. F. Long, also served as County Supervisor of high schools. As funds permit this service will be extended. This year essential research work in high school methods and results has been undertaken in the Hyattsville High School under the direction of the supervising teachers.

Within the next two years at least two additional supervising teachers will be required.

Department of Agricultural Education and Rural Life—During the past three years this department in charge of Professor H. F. Cotterman has been able to meet the demand for trained teachers of vocational agriculture and has had the largest classes in its history. The enrollment for each of the three years of the triennium was: 1923-24, twenty-six; 1924-25, thirty; 1925-26, forty. In addition to caring for these students who are enrolled in agricultural education curriculum, the department carries its quota of basic courses in education in the College of Education and in the Summer School.

Four new courses were inaugurated during the period under consideration, as follows: Survey of Methods for Agricultural Students; Teaching Farm Shop in Secondary Schools; College Teaching, and Seminar in Agricultural Education. The course in the Objectives and Methods in Extension Education was established earlier, and has proved successful. Part-time service of a specialist is needed to offer graduate courses for the training of county agents and other extension workers, particularly for such of these workers as desire courses for improvement in service. The department also recognizes the need for the development of field surveys of rural communities of the type called for by educational leaders and other community workers; but it has not, up to the present time, had sufficient personnel to permit it to undertake studies of this character.

The department has been able to arrange for its members to attend the important State and National conferences in its field, and the professor of agricultural education has been able to "follow up" those graduates of the University who have been employed as beginners in the State each year. The demand upon the department for extension work, peculiar to its field, continues as heavy as in past years.

The arrangement with school authorities of Prince George's County, whereby the prospective teachers of Agriculture get experience in teaching under supervision in the Hyattsville High School, has been in successful operation for five years. One critic teacher is employed. Thirty pupils is the normal enrollment in the department

of Vocational Agriculture in this school. This number insures ample opportunity for the necessary supervised teaching on the part of students in the department of Agricultural Education and enables the department to do far more research in the field of Agricultural Education than would be possible with larger enrollment. The facilities of this training department have been materially increased. The department now has a specially equipped laboratory and a very satisfactory room which can be developed into a model farm shop as soon as funds are available for the necessary equipment. In order to increase the efficiency in the work in the training department, arrangements should be made to let the critic teacher in agriculture assist the professor of Agricultural Education in following the graduates of the teacher-training department in the field. To perfect such an arrangement and to conduct the necessary field studies, would require the addition of a full-time man. With such an addition in personnel, very essential projects in educational research could be conducted.

Summarizing the needs of the department of Agricultural Education and Rural Life, there is urgent need for a full-time person to assist in the follow-up of graduates in Agricultural Education and in the itinerant teacher-training program and to plan and conduct rural community studies; and for part of the time of a specialist to offer an advanced graduate course in the administration and organization of extension work. One other need is special laboratory space for the special features of the department work. This need is not met by the laboratory space in the Hyattsville High School. *Without such a laboratory at department headquarters*, it is impossible to house and operate the equipment and materials necessary to most effective instruction.

Department of Home Economics Education—This department, in charge of Professor Edna B. McNaughton, is serving the needs of the State in the training of teachers of Home Economics—both for high schools and for extension teaching. There are now twenty-two (22) students enrolled in this department. Due to the fact that Home Economics is now a required subject in nearly every high school in the State, and also that teachers of this subject must be graduates of approved four-year institutions of college rank, the demand for teachers of home economics is in excess of the number of teachers available.

During the past triennium facilities for student teaching in Home Economics have been greatly improved. With the remodelling of the high school at Hyattsville, it was possible to have more laboratory space. A department of vocational home economics has been established. The student teachers get their practice teaching with this group. The regular teacher of this department also acts as critic teacher. Summer home project work is carried on with these vocational classes.

The equipment for the clothing laboratory was furnished by the College of Education in order to demonstrate the type of equipment which makes for effective work.

The high school at Hyattsville with its present equipment provides facilities for teaching foods, clothing, and household management. It is hoped that in the future a cottage may be added which will give opportunity for teaching home making under conditions more nearly approximately home conditions.

The Professor of Home Economics Education acts also as State Supervisor of Home Economics. As Professor of Home Economics Education, she is responsible for giving the professional courses essential to the training of teachers of home economics, including Methods of Teaching Home Economics, Child Care and Training, and the Education of Women; and for the supervision of the work of the critic teacher. As State Supervisor she makes two visits a year to the vocational schools and also assists the departments of general home economics as much as time will permit; and is responsible for planning and arranging home economics programs for regional and State Conferences.

At no distant date the full time of the Professor of Home Economics Education will be demanded for the work of teacher training in the University.

Department of Industrial Education—The work in Trade and Industrial Education in the State of Maryland is under the direction of a Professor of Industrial Education who is employed by the University of Maryland to devote approximately three-fourths of his time to the training of teachers, the improvement of teachers in service, and to conducting conferences for foremen employed in industrial plants, and one-fourth of his time under the direction of the State Board of Education to the promotion, organization, and supervision of trade and industrial education.

During the past three years the department has been handicapped somewhat by rotation in office, a different incumbent each year. The department is now in charge of Professor Benjamin T. Leland. The prospect for continuity of service, and consequently of development of a program, is favorable.

In the fall of 1923, cooperative relationships were established between the University of Maryland, the State Board of Education, and the Federal Board of Vocational Education, whereby a comprehensive series of teacher-training and plant training courses (including courses in foremanship), were projected and advertised for the purpose of determining to what extent such a program could be carried out in the State under average working conditions.

The following courses for the training of teachers were organized. All of these courses except (2), (3) and (7) have been conducted in

Baltimore at least once during the triennium. (1) Introduction to Vocational Education; (2) History and Philosophy of Industrial Education; (3) Organization and Administration of Industrial Education; (4) Methods of Teaching Industrial Subjects; (5) Lesson Planning and Practice Teaching; (6) Shop Organization and Management; (7) Methods of Teaching in Evening Schools; (8) Objectives and Organization of Part-Time Education; (9) The Organization and Methods of Teaching the Non-Vocational Subjects in Industrial Schools; (10) Vocational Psychology; (11) Occupational Information, Guidance, and Placement.

For foremen and prospective foremen, two courses have been given: Plant Training and Human Relations in Industry and General Principles of Psychology Applied to Industry.

In order to meet the needs of the groups concerned, the work has been conducted in the form of extension courses meeting in the late afternoon, in the evening, and on Saturday morning, once every week for a period of two hours. The total number of sessions, in most cases, was eighteen.

To encourage teachers of trade and related subjects to improve themselves and to meet the State requirements for certification, the University of Maryland through the College of Education inaugurated the policy of awarding a diploma to each teacher completing two hundred and forty (240) hours of teacher training work; and, to properly qualified persons, the Bachelor of Science Degree in Industrial Education upon the completion of a four-year curriculum.

A summary of the work of teacher training and of foreman training over the period of three years shows the following:

Number of teacher training courses conducted.....	12
Number of white teachers enrolled	174
Number of colored teachers enrolled.....	18
Number of courses for foremen conducted.....	9
Number of foremen enrolled.....	209

Because of the interest in, and growth of industrial education in the State, the Professor of Industrial Education has been kept very busy trying to meet the many demands upon his time for teacher training, foreman training, and supervision. The City of Baltimore has absorbed most of this time, but, even here, the time of one person might be entirely employed upon the work of teacher training and supervision, and that of another person upon the work of foreman training.

In order to meet the needs of points outside the City of Baltimore, especially in Allegany, Anne Arundel, Baltimore, Frederick, Garrett and Washington Counties, funds should be available for the employment of additional personnel. As all of this work is under the Smith-Hughes Federal-State Cooperative plan, the amount of State funds required is very moderate.

Physical Education—The following statement was part of my last biennial report: "Maryland has a compulsory physical education law. The State Department of Education in cooperation with the Playground Athletic League, has promoted a wise policy of making this law gradually effective. The most important accessory agency for making the law effective is facilities for preparing teachers and supervisors for this work. The summer school has made a modest beginning towards fulfilling this requirement, but there is urgent need for a department and a professor of Physical Education in the College of Education. For the immediate future he could serve also as Director of Physical Education for the College in charge of the special and corrective work."

The experience of the past triennium has confirmed and emphasized this need. Students are now coming to recognize the importance of physical education as a vocation and are asking for curriculum provision to meet their needs.

Equipment Deficiencies—It was noted above that the Department of Agricultural Education suffers from lack of definite laboratory space. It is equally true that the College as a whole suffers from lack of definite class rooms and laboratories. At present it suffers even from lack of adequate office space and consultation rooms for the members of the faculty. Without class rooms devoted specifically to the courses in education it is impossible to assemble and utilize effectively the demonstration material essential to the most successful teaching.

Summary—The College of Education has grown satisfactorily during the triennium just closing both in numbers and usefulness as measured by the increasing extent and variety of its services. With moderate increase in resources its usefulness will be very greatly increased. The necessary additions to personnel are a Professor of Educational Administration and Statistics, whose work will be largely research; a Professor of Elementary Education; a Professor of Physical Education; an Assistant Professor of Industrial Education; additional critic teachers for the cooperative teacher training enterprise in the Hyattsville High School; and additional personnel in the Department of Agricultural Education—one full-time and one part-time man as specified in report of that department. Salary increases will be needed to hold the present staff. The immediate and urgent equipment need is for space for class rooms and laboratories devoted specifically to College of Education purposes. The ultimate need is for an Education Building as specified above.

The proper development of the program of the College of Education will not give the University a monopoly in this field and it will not curtail the usefulness of the other institutions in the State that are concerned in preparing teachers. All of these resources combined

do not now meet the need for trained teachers. The University College of Education if it does its duty will supply part of needed high school teachers of the traditional subjects (probably never more than 50 per cent); all of the vocational teachers; will meet the logical demands in the post-normal elementary school field; and will provide adequate facilities for the preparation of high school principals and supervising officials and for carrying on necessary educational research.

Respectfully submitted,

WILLARD S. SMALL,
Dean.

The Summer School

To the President of the University:

The program of instruction in the Summer School is planned to meet the needs of four classes of students: (1) teachers in service who desire Summer School opportunities; (2) regular undergraduate students who are candidates for degrees in the several colleges; (3) graduate students; (4) special students who find they can attend college conveniently during the summer such as farmers, breeders, dairymen, home makers, chemists, and others desiring special work.

The last biennial report showed an enrollment of 452 in the summer of 1923. Of these, 71 were Veterans' Bureau students on field projects. The actual enrollment at College Park was 381. The enrollment in the summer of 1926 was 477, a net gain of 96 within the triennium. The distribution was as follows:

1. By sex: Men, 136; women, 341.

2. By groups: (1) graduate students, 44; (2) regular undergraduate students, 73; (3) high school teachers, 74; (4) elementary school teachers, 285.

3. By residence: Maryland, 386; other states and foreign countries, 91.

Every county in the State was represented, the numbers varying from 2 to 74.

Approximately 75 per cent of the enrollment consists of teachers of whom one-fourth are high school teachers. The experience of the past three years confirms the statement made in the last report that an increasing number of teacher-students are registering as candidates for degrees and that similarly there is an increasing number who register for graduate work in preparation for the high school principalship and for the supervisory positions. As pointed out in the current report of the College of Education, the demand for a post-normal curriculum leading to a degree in elementary education has now reached the point where it must be met. The summer school will play an essential part in operating this program.

The demonstration schools, both elementary and high, have become integral parts of the summer school program. In order to meet the demands for observation in connection with methods courses, both of these schools must be expanded. The enrollment in the elementary school is now limited to approximately twenty-five. Next year it will be necessary to increase this limit to fifty and change from a one-

teacher to a two-teacher school. The demonstration high school was established in 1923 at the request of the State Department of Education. Enrollment has been limited to pupils just entering the high school. This year a plan was adopted whereby pupils completing successfully the six weeks program are given one-half credit towards graduation in the State high schools. This has resulted in better work on the part of the pupils. The enrollment was limited to fifty; 40 were enrolled. It will be necessary to expand the program of this school in order to provide better opportunity for observation and to provide limited opportunity for practice teaching in accordance with State requirements.

Among the improvements made during the triennium may be mentioned the increase in the number and scope of courses of graduate grade; further development of the policy of providing courses in sequence for a series of sessions; retention of the special summer school instructors from year to year, thus assuring a degree of continuity in courses and methods; and the establishment of courses in music and art both for elementary and high school teachers. Plans are now practically matured for a four-summer program in high school music that will merit a special certificate or diploma.

The cost of operating the summer school has just about kept pace with the increase in enrollment. Taking into consideration the increase in the variety and quality of courses provided, cost has lagged. Our rate of compensation has been somewhat below that of most institutions of our grade. It will be necessary to spend more money in the years immediately ahead in order to maintain our standards of instruction, even if no expansion of facilities were involved. Fortunately the revenues derived from the summer school make possible increased expenditures without additional appropriations.

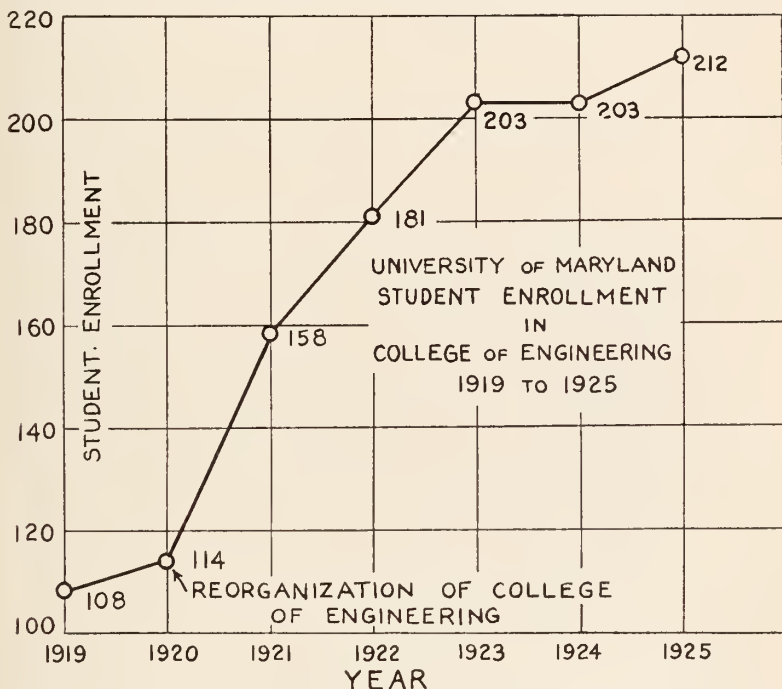
Respectfully submitted,

WILLARD S. SMALL,
Director.

The College of Engineering

FROM 1923 TO 1926

The past three years have been very active for the College of Engineering. The student enrollment, as shown on the accompanying chart, has increased rapidly since the reorganization of the Engineering College in 1920, and has reached a number which taxes to the utmost the present instruction staff and facilities of class rooms and laboratories. Further growth of the Engineering College is not prac-



ticable until additional buildings and equipment are provided, and until then the University will be unable to accommodate all of the Maryland young men who desire to secure an engineering training at their State University.

During the past three years the teaching staff has been increased by two, thus permitting of a better distribution of the teaching load.

The Engineering College has received gifts of apparatus and equipment from industrial concerns valued at \$10,000 and from the War Department, through the Maryland State Roads Commission, equipment valued upwards of \$20,000. This additional equipment has

been of great help in teaching. However, considerable of this equipment, such as boilers and generators, which would prove of value in instruction and experimentation, has not been erected due to lack of space to accommodate it, while it has been necessary to refuse other offers of large equipment for the same reason.

It is worthy of note that large industrial concerns, such as the American Telephone and Telegraph Company, the Westinghouse Electric and Manufacturing Company, the General Electric Company, and the Babcock and Wilcox Company have, through their representatives, interviewed our prospective graduates each year, and have offered them positions in their organizations.

Mention should be made of the organization in 1923 of the Phi Mu Honorary Engineering Fraternity, which has been functioning successfully since. The object of this organization is to secure recognition of scholarship in the Engineering College, and there is a probability of its being designated next fall as a chapter of the Tau Beta Pi Association.

Since 1923 extension classes for miners in the coal fields have been conducted in the western part of the State in cooperation with the State Bureau of Mines. These courses have proved very popular, more than one hundred certificates having been awarded for attendance during each of the past two years. Some of these classes are the largest of their kind in the country.

During the past three years we have carried on considerable engineering research work in cooperation with the U. S. Bureau of Public Roads and the State Roads Commission of Maryland. The researches consisted of highway traffic studies and a series of investigations on the elastic properties of concrete. Special apparatus required in the prosecution of these studies has been designed and made in the laboratories of the Engineering College. A number of papers giving results of our researches have been presented at meetings of technical societies, and a lecture has been delivered annually by the Dean of the Engineering College to the class in highway transportation at Yale University.

Close relations have been maintained between the Engineering College and the Highway Research Board of the National Research Council. The Dean of the Engineering College was recently re-elected for the fourth year as Chairman of the executive committee of the Highway Research Board, and Professor S. S. Steinberg, head of the Department of Civil Engineering, has during the past year served also as Assistant Director of that Board on a part-time basis.

The Dean of the Engineering College served by appointment as one of the final delegates on the part of the United States to the Congress on Highways recently held in Buenos Aires, Argentina.

Respectfully submitted,

A. N. JOHNSON,
Dean.

The Graduate School

To the President of the University:

The increasing demand for men and women who have pursued intensive graduate study in a restricted field and who are trained in the methods of research has imposed a greater responsibility upon our universities. The University of Maryland through the agency of the Graduate School is endeavoring to meet this responsibility and thereby accomplish one of the important functions of an institution for higher education.

The Graduate School was organized seven years ago with an enrollment of 12 students. The growth of this school is indicated by a total enrollment of 159 students for the year 1925-1926. This number includes 48 summer school students and 27 students in special graduate courses in chemistry offered at Baltimore.

Since most of our graduate students are candidates for the Master's degree requiring only one year of full time residence, the Graduate School has a large turnover of students each year. The enrollment and degrees conferred, by years, for the past three years, are shown in the following table:

Year	ENROLLMENT			DEGREES CONFERRED			
	Regu- lar Session	Sum- mer Session	Graduate Courses in Chemistry in Baltimore	Total	M.S.	M.A.	Ph.D. Total
1923-24	78	43		121	30	3	1 34
1924-25	73	56		130	9	4	5 18
1925-26	84	48	27	159	24	14	6 44

Many of the men and women who have received advanced degrees are now occupying the higher positions in the teaching profession while others are discharging important duties as scientific specialists and experts in agriculture and other industries, in public health laboratories, and in the service of the State and Federal Governments. The men with the Ph.D. degree by virtue of their scholarship in their chosen fields and their training in the methods of research have been especially in demand to fill research positions in the State Agricultural Experiment Stations and in other government and private research agencies.

One of the requirements for a higher degree in the Graduate School is the preparation of a thesis or dissertation. This is frequently based upon some phase of a research project related directly to the agricultural and other industries of the State. The students who major in the field of Education investigate important problems

pertaining to public education in the State. In this way, the graduate students assist very materially in the solution of problems that are of great importance to the Commonwealth. The scope of the problems investigated by graduate students is shown in the following list of titles of theses submitted during the past three years:

ADVANCED DEGREES AND TITLE OF THESES

Class of 1924

EZEKIEL, W. N., *Ph. D.*

Strains of the American Brown-Rot Fungus.

ANDERSON, O. W., *M. S.*

Cow Testing Associations in Maryland.

BESLEY, A. K., *M. S.*

Bacterial Content of Powdered Milks.

BREWER, C. M., *M. S.*

Bacteria in Market Meats.

BRUNSTETTER, B. C., *M. S.*

The Relation of Insulin and Glucokinase to Carbohydrate Metabolism in Plants.

CLARE, I. C., *M. S.*

Methods of Detecting and Distinguishing the Ingredients of Fertilizers.

DASKAIS, H. M., *M. S.*

Decarboxylation of Pthallic Acid and Relation to Electronic Structure.

ELDER, J. W., *M. S.*

A Quantitative Study of the Effect of the Hydrogen-Ion Concentration in Electric-endosmose Work.

FIELDS, J. N., *M. S.*

The Influence of Feeds on Flavors and Odors of Milk.

FLANAGAN, S. E., *M. A.*

Development of Public Education in Prince George's County.

FLENNER, A. L., *M. S.*

Adsorption from Solution by Hydrous Alumina.

FLYNN, J. E., *M. S.*

An Investigation of the Substance Concerned with Death of Plant Tissue Attacked by *Sclerotinia Libertiana*.

GRAFFLIN, M. W., *M. S.*

Unsymmetrical Mercuri-organic Derivatives and a Potential Gradient for Organic Radicals.

HARLEY, C. P., *M. S.*

Fruit-spur Growth and Composition.

HOLMES, M. G., *M. S.*

The Nutrient Value of Soybeans at Various Stages of Growth, the Correct Harvest Date for Forage.

- KIMBROUGH, W. D., *M. S.*
Effect of Storage Temperature on Respiration of Potatoes at Market Temperatures.
- KNODE, J. S., *M. S.*
The relationship to Flow of 2, 3 and 4 times Per Day Milking.
- KRANTZ, J. C., *M. S.*
A Study of the Relative Preservative Values of Glycerin and Sugar in Certain Official Preparations.
- LAGASSE, F. S., *M. S.*
The Effect of Shade on Quality and Composition of Lettuce.
- LANGFORD, G. S., *M. S.*
Biology and Life History of *Trogerderma Tarsala*.
- LINDQUIST, H. G., *M. S.*
Variations in solids other than Fat when the Percentage Fat in Different Milk is the Same.
- MACKERT, C. L., *M. A.*
The Process of Speech Assimilation as Observed at the University of Maryland.
- MALCOLM, G. W., *M. S.*
Effect of Pasturization on the Cream Layer and Microflora of Milk.
- MARKER, R. E., *M. S.*
Effect of Hydrogen-ion Concentration on Adsorption of Dyes by Inorganic Gels.
- POLLOCK, G. F., *M. S.*
Dairy Feeding Statistics of the United States.
- POTTS, S. F., *M. S.*
Biology and Control of the Pea Aphis.
- SANDERS, P. D., *M. S.*
Insecticidal Value of Colloidal Sulphur.
- SCHOPMEYER, C. H., *M. S.*
Analysis of the Management of a Farm Business.
- STAMP, A. H., *M. S.*
Community Organizations in Maryland.
- TROY, V. S., *M. S.*
Determination of the Keeping Quality of Milk by Means of the Sodium Hydroxide Titration Test and Alcohol Precipitation Test; versus the Colorimetric Hydrogen-ion Determination Test.
- VANDEN BOSCHE, E. G., *M. S.*
A Study of the Ternary System.
- WALKER, W. P., *M. S.*
Influence of Fertilizers on the Set of Fruit Blossoms.
- WHITE, C. E., *M. S.*
Adsorption of Dyes by Inorganic Gels in Presence of Salts under Varying Hydrogen-ion Concentration.
- WINANT, H. B., *M. S.*
A Study of the Potassium-Thiocyanite Method for Determining Soil Activity.

Class of 1925

CONRAD, C. M., *Ph. D.*

A Biochemical and Physiological Study of the Pectic Material in Some Fruits and Vegetables.

KIMBROUGH, W. D., *Ph. D.*

A Study of Respiration in Potatoes with Special Reference to Storage and Transportation.

LIU, H., *Ph. D.*

The effect of Fertilizers on the Chemical Composition and Physical Properties of Tobacco.

SCHRADER, A. L., *Ph. D.*

A study of the Concord Grape Vine in Relation to Pruning and Fruiting.

SMITH, A. M., *Ph. D.*

A Study of the Factors Influencing the Efficiency of Different Forms of Nitrogen as Related to Soil Type and Cropping System in the Atlantic Coastal Plain Region.

BURDETTE, R. C., *M. S.*

A Comparison of the Effectiveness of Chemically Pure and Commercial Carbon Bisulphides in the Fumigation for the Angoumois Grain Moth.

ERICSON, E. E., *M. A.*

The New Thought of Alfred Tennyson's Time.

HITCHCOCK, A. E., *M. S.*

Regeneration in Potatoes.

LEATHERMAN, M., *M. S.*

Comparison of Rates of Neutralization of Soil Activity by Eight Different Liming Materials.

MELROY, M. B., *M. S.*

The Legume Inoculum Project in the State of Maryland.

MUMFORD, J. W., *M. S.*

Behavior and Inheritance in the Fulcaster Wheat Family.

PREINKERT, M. M., *M. A.*

The Significance of Occupational Taboos Among Primitive Peoples.

REINMUTH, O. P., *M. S.*

Effect of Hydrogen-ion Concentration on the Adsorption of Dyes by Gels. Also Methods, Apparatus and Calculations for the Determination of Specific Gravity.

REMSBERG, H. A., *M. S.*

A Study of the Concentration and the Nitrate Content of Residual Solutions from Sand Cultures.

SKILLING, J. C., *M. S.*

The Changes of Hydrogen-ion Concentration of Human, Bovine and Avian Types of the Bacillus Tuberculosis in Bouillon Cultures.

WATKINS, R. M., *M. A.*

The Relation of National Child Labor Legislation to Conditions in Maryland.

WEIMER, W. W., *M. S.*

The Effect of Adsorption on Freezing Points.

WELSH, C. P., *M. A.*

Sanitary and Social Conditions Surrounding the Child of the Pre-School Age.

Class of 1926

BOSWELL, V. R., *Ph. D.*

A Study of Some Environmental Factors Influencing the Shooting to Seed of Wintered-Over Cabbage.

ISELL, H. S., *Ph. D.*

The Chemistry of Gold Carbon Compounds.

LICHTENWALNER, D. C., *Ph. D.*

Heat Changes Accompanying Adsorption Equilibria in Solution.

McKIBBIN, R. R., *Ph. D.*

The Effect of Sulphur on Soil Reaction and Plant Growth.

STARKEY, E. B., *Ph. D.*

A Test of the Theory of Partial Polarity; the Addition of Halogen Acids to Double Bonds in Inert Solvents.

WHITE, C. E., *Ph. D.*

The Effect of the Presence of Phosphates on the Adsorption of Acid Dyes by Mordants.

ALDRICH, W. W., *M. S.*

Is there a Cross Transfer of Carbohydrates in the Apple Tree?

ALDRIDGE, H. R., *M. S.*

Relative Efficiencies of Various Types of Coils Used in Radio Circuits.

ANDERSON, P., *M. S.*

The Biology and Control of *Lopidea Davisii* Knight.

BOUIS, G. E., *M. S.*

Roadside Markets in Maryland.

BREWER, V. W., *M. A.*

A Tabulated Analysis of the Philosophy of Walt Whitman.

BRONLEY, W. D., *M. S.*

The Effect of Overrun, Temperature and Composition on the Dipping Losses in Ice Cream.

BURROUGHS, J. A., *M. S.*

A Statistical Study of the Commercial Aspects of Sweet Potato Production.

CLAPP, H. G., *M. S.*

Reduction of Viscosity and Film Properties of Nitro-Cellulose Solutions.

- COOKE, G. B., *M. S.*
The Role of Foreign Molecules in the Solidification and Lubrication of Oils.
- DAY, F. D., *M. A.*
Systems of Practice Teaching and Methods of Supervising Practice Teachers in Secondary Vocational Agriculture.
- DORSEY, A. H., *M. S.*
A Study of the Effects of Mercurochrome on the Formed Elements of the Blood.
- EPPLEY, E. F., *M. A.*
The Development of Dualism in Religion.
- EPPLEY, G., *M. S.*
Hay and Pasture Grasses and Legumes for Maryland. Adaptability Studies.
- FANCHER, G. H., *M. S.*
A comparison of Diatomaceous Earths.
- FRANK, P. S., *M. A.*
Is Our National, State and Community Investment in Vocational Agricultural Education a Profitable One?
- GARDNER, G. P., *M. A.*
A Study of Public Education in Howard County, Maryland.
- GATES, P. W., *M. A.*
A Vocational Survey of the Poolesville Community as an Index to Curriculum Content in Vocational Agriculture.
- HALE, R. F., *M. S.*
Wheat Storage on Maryland Farms.
- HALLER, M. H., *M. S.*
The relation of Leaf Area to the Growth and Composition of Apples.
- HORN, M. J., *M. S.*
1. A Study of Organo-Trivalent Arsenic Derivatives. A Method of Preparing Soluble Derivatives.
2. Lead-Nitrogen Derivatives.
- HOWARD, D. J., *M. A.*
The Value of a Program in Vocational Agricultural Education as Evidenced by some Results Attained in the State of Virginia.
- HUNTER, H. A., *M. S.*
Relation of Ear Infection with Certain Microorganisms to Internal Cob-Discoloration of Corn.
- LINCOLN, L. B., *M. S.*
Retail Margins on Farm Products and Several Manufactured Products in Washington, D. C.
- MARSHALL, H. L., *M. S.*
By-Product Potash; Its Efficiency as a Source of Potash in Mixed Fertilizer.
- MARTIN, T. C., *M. A.*
The Junior High School Movement with Special Reference to the High School Situation in Maryland.
- MCBRIDE, H. E., *M. A.*
The State School Fund.

- MCKINNELL, I. E., *M. S.*
Tests of Chemical Ability and Their Value.
- MINATRA, C. O., *M. A.*
Suggested Changes in the Government of the Normal Dependent Child.
- MOOK, P. V., *M. S.*
Certain Ecological Factors Affecting the Oyster (*Ostrea Elongata* Solander) in the Chesapeake Bay, with Special Reference to the Oyster Larvae.
- SHOEMAKER, H. R., *M. A.*
A Standard Department of Vocational Agriculture in Maryland.
- STRAKA, R. P., *M. S.*
A Study of the Effects of Several Media with Different Hydrogen-ion Concentrations on the Agglutinating Ability of Several Strains of *Bacterium Abortus*.
- SUMMERILL, R. L., *M. S.*
The Food Value of a Commercial Product Containing a High Per Cent of Edible Oil and Fat.
- WADKINS, R. F., *M. S.*
Apple Root Rot Disease.
- WALTER, H. M., *M. S.*
The Solubility Product of Copper Hydroxide and of Nickle Hydroxide.
- WICKARD, H. C., *M. A.*
An Experiment in Teaching Chemistry by the Project Method.
- WILLIS, B. C., *M. A.*
State and Local Support of Schools Up to the Present Time.
- WILSON, N. J., *M. S.*
A Comparison of the Reductase Test, the Catalase Test, and the Plate Count on Market Milk.
- WINKJER, T. H., *M. A.*
Modifications of Buddhism in China and Japan Due to Economic and Other Social Influences.

Our present system of service fellowships and graduate assistantships is furnishing to several of the departments efficient service at a very moderate cost. In order to supply the present demands for this type of service, provision should be made for an increased number of both fellowships and graduate assistantships. A greater number of fellowships would also enable us to assist some very desirable and worthy students who would like to come to Maryland for graduate work but who go elsewhere inasmuch as they are able to secure fellowships at other universities. A more detailed statement of the needs of the Graduate School for the next biennium is embodied in my report submitted January 20, 1925.

Respectfully submitted,

C. O. APPLEMAN,
Dean.

The College of Home Economics

Home Economics was made a part of the University curriculum in the fall of 1918. The course of study in home economics is planned to meet the needs of the following classes of students: (1) those who desire a general training in home economics; (2) those students who wish to teach home economics in schools or through the University Extension Service; (3) those who are interested in certain phases of home economics with the intention of becoming dietitians, restaurant and cafeteria managers, textile specialists, clothing designers, buyers of clothing in department stores, demonstrators for commercial firms and other similar positions.

It is the aim of the College of Home Economics to so arrange its course of study that students will have a good general foundation on which to build before specializing in home economics; for that reason the first two years in all home economics curricula are, with few exceptions, the same. At the beginning of the third year, after the student has gained some maturity of judgment she may elect to specialize in some phase of home economics for which she feels she is suited.

For administrative purposes the College of Home Economics is organized into the Departments of Foods and Nutrition, Textile and Clothing, and Home and Institutional Management.

The Department of Foods and Nutrition offers courses in the choice, preparation, service and preservation of foods. This department has its elementary courses in foods well established and now is turning its attention to the development of courses in advanced and experimental foods.

A small laboratory adjoining the foods laboratory has been recently furnished with equipment necessary for experimental work in foods. Experiments in the cooking of meats are already in progress in collaboration with the University Experiment Station and the Department of Agriculture. For this work a fellowship in home economics has been given to a former student, who received her Bachelor of Science degree a few years ago at the University. This is the first graduate work offered by the College of Home Economics.

The Department of Textiles and Clothing offers courses in textiles and clothing and for reasons of economy, has also offered the courses in art necessary for a home economics curriculum. Eventually it will be necessary to make a separate department for art, as the demand increases.

In accordance with the best opinion in this field, it has seemed wise to place the emphasis in the clothing work upon the economics of clothing, rather than upon the construction of clothing. This includes the clothing budget, the selection of ready-to-wear clothing for both men and women with regard to materials, design and workmanship. Courses are also given in the designing and remodeling of clothing for both adults and children.

The courses in art include elementary courses in principles of art, which are prerequisite to the designing of clothing and to house furnishing and decoration.

The purpose of the department of Home and Institutional Management is two-fold: to offer courses and practical experience in home and institutional management for students desiring such training; and to carry on the practical work within the University—namely the management of the dining hall and laundry.

The completion of the new dining hall this year fills a long felt need. In this building is a large dining room for all regular boarding students, also a cafeteria for day students, faculty and visitors; and two smaller dining rooms which may be used together or separately for conference luncheons and dinners. One kitchen and staff will provide for these separate units.

The institutional management students will receive their practical experience in the new dining hall. The home management students receive their practical training in the home management house.

An outline for an institutional management curriculum was arranged and put into the 1925-26 catalogue for the first time. Some dozen young women are already enrolled in these classes and will soon be ready to help meet the ever increasing demand for women who are trained in this work.

To summarize briefly, the last three years have seen a steady advancement made by the College of Home Economics. The enrollment has increased each year, new courses have been added, and courses already established have been improved. This year has been the beginning of graduate work in home economics and the beginning of home economics research under the Purnell Act. Facilities are somewhat improved and some additions have been made to the equipment.

More than forty young women have received Bachelor of Science degrees in Home Economics and Home Economics Education from the University. A recent survey showed that all of these young women were using their home economics training. Thirty-five per cent were married with successful homes of their own. The remainder of the group were meeting with more than average success in the various fields of their chosen profession.

Respectfully submitted,

M. MARIE MOUNT.

The School of Medicine

To the President of the University:

The work of the Medical School during the years 1923-1924, 1924-1925 and 1925-1926 has had as its chief activity the teaching of undergraduate medical students. The performance of this work has necessitated assuming the responsibility for the patients in the free wards of the University and Mercy Hospitals and the Dispensaries and Outdoor Clinics associated with these hospitals.

The physical changes in teaching facilities during the last three years consist of a four-story addition to the Gray Laboratory, which increases the teaching space in the Laboratories of Anatomy, Physiology, Pharmacology and Operative Surgery and gives us a very satisfactory room for the proper housing and care of animals for experimentation; and an addition to the Laboratory of Physiological Chemistry, which increases our space in this Laboratory about twenty-five per cent.

In the University Hospital, the Laboratory of Clinical Pathology has been improved; a great improvement has been made in the Dispensary occupied by the Department of Medicine; and an additional ward has been made for the care of children. These changes not only improve our facilities in the matter of teaching medical students but removes the necessity for an affiliation with other hospitals by our Training School in the matter of teaching Pediatrics. The Hospital has also been made much safer and greatly improved, both in appearance and efficiency, by the appropriation of \$75,000.00 of the last Legislature.

The increased usefulness of the Dispensary is shown by the fact that in 1923-1924 there were 63,000 visits, in 1924-1925 there were 85,000 visits and in 1925-1926 there were 90,000 visits. At the present rate, the year 1926 will show the care of nearly 100,000 visits. In addition to this, the Dispensary maintains a limited Social Service Department and under the supervision of the Obstetrical Department nearly 1,000 women are delivered in their own homes each year.

The money furnished by the last Legislature has been utilized to greatly improve the laboratory equipment and while much is still needed, the laboratories are in better shape in the matter of equipment than at any time in the existence of the school.

There are 200 teachers in the school, of whom 43 are paid—13 full time—4 half time—and 26 part time. Most of the part-time teachers

are paid only a small honorarium. The remaining teachers in the school (more than 150) receive no remuneration for their services. The salaries of the full-time teachers (averaging about \$3,000 a year) are quite low when compared with schools doing equivalent work.

An important work of the Medical Department has been the establishment of Extension Courses for general practitioners. At present, this work consists of:

(a) Clinics in Medicine, Surgery, Obstetrics and Special Subjects to general practitioners. These are held every Thursday afternoon during the Fall and Winter and have been attended by an average of 200 physicians, many of whom are from the rural districts. The enthusiastic reception which these Clinics have received has been very gratifying and they are becoming a permanent part of our Extension Course.

(b) During June of each year, Review Courses are held in Medicine, Surgery and Specialties. These courses are for general practitioners but have only been fairly well attended. We hope, however, that they will become more and more useful to the general practitioners of the State.

(c) Extra-mural teaching. Short courses and clinics have been given by members of the teaching staff of the University in various towns throughout the Counties of Maryland, when requested to do so by members of the local County Medical Societies.

Our Laboratory facilities should be increased in the matter of space and equipment. Our clinical facilities should be increased by the addition of free beds in the University Hospital. Our teaching staff should be increased by additional full-time and part-time teachers. One of the most imperative needs is the establishment of a modern Library.

The students in attendance were as follows:

1923-1924	340
1924-1925	354
1925-1926	372

We have each year a great many more applicants than can be admitted. This is in spite of the fact that the tuition fees for non-resident students have been increased from \$200.00 to \$350.00 and will probably, of necessity, be still further increased in coming years. The cost to us of teaching a medical student each year is more than \$500.00 and there is certainly no reason why non-resident students, at least, should not bear the principal part of the burden of teaching them.

In conclusion, we wish to state that the Medical School is in a position to render the most valuable assistance to the practitioners of the State and through them bring whatever benefits it may to the various communities which they serve. These benefits should be and can be made easily available. The school is anxious to bring this about and the staff stands ready to cooperate with the physicians of the State in helping to solve any of the problems which may confront them.

Respectfully submitted,

J. M. H. ROWLAND,
Dean.

The School of Law

To the President of the University:

In the last biennial report of the School of Law it was stated that the faculty was giving its earnest consideration to the question of raising the requirements for admission to the Law School. That consideration has resulted in important changes in the standards and organization of the school, which, with the approval and support of the President and the Board of Regents, are now being put into effect.

With reference to the standards for admission, it has been the experience of the faculty that the preparation afforded by high schools and other secondary institutions is an inadequate foundation for the study of law. The complexity and expansion in character of services which the lawyer is now called upon to perform requires a broader foundation of general education. The faculty has therefore adopted as its requirement for admission the successful completion of at least two years of college work. Announcement of this change was made in the 1925 catalogue, and in accordance therewith students entering for the 1926-27 scholastic year will be required to have had at least one year of college work, the two-year requirement becoming effective in the fall of 1927. Provision is also made for a limited number of special students of mature age, who, while not possessing the academic education required, are, in the opinion of the Faculty Council, especially qualified by their experience for the study of law. The standards above stated are those which have been approved by the American Bar Association and by the National Conference of State Bar Associations, and which have been or are being adopted by most of the law schools in the United States.

The organization of the school has also been materially changed. Heretofore the school has been a part-time school, that is, its lectures have been held at hours in the afternoon and evening convenient to the faculty, composed almost entirely of members of the Bench and Bar of the city, and to students who were employed during the day. It is the further experience of the faculty that it is impossible for the student who is so situated that he cannot devote substantially all of his time to his studies, to obtain the greatest benefit from his law course in the period of three years, and the course in the evening school was lengthened to four years. This change was made effective at the beginning of the 1925-26 session.

The other change in the organization of the school was the inauguration of a full-time day school. It was realized that there is an increasing number of students in the State who can devote substantially their entire time to law study, and who desire to acquire their

degree and prepare for the bar in a shorter period. To afford them this opportunity, a three-year course of instruction, the classes in which are held during the morning hours, was inaugurated. Courses in the first year of this school were given last year. The second-year courses will be given this fall and the third courses in the fall of 1927. The Law School is therefore, now divided into two divisions, the Day School of three years, and the Evening School of four years. The same curriculum is offered in each school, and the standards of work and graduation requirements are the same in each school.

The above changes, both as to entrance requirements and organization, are in accord with the recommendations of the American Bar Association, which have the approval of the National Conference of State Bar Associations and which have been or are being adopted by most of the law schools in the United States. While we cannot as yet appraise them from experience, it is confidently believed that their adoption enables the school to offer its students legal education equal to that of the better law schools in other states, to gain the recognition and approval of the standardizing agencies in legal education, and to insure and increase efficiency and strengthened moral character in those applying for admission to the Bar.

The institution of the Day School has rendered it necessary that additional full-time instructors be procured. It is contemplated that when all of the courses are being given, the school will have a minimum of four instructors devoting their entire time to Law School work. In addition, many of the members of the part-time faculty are giving their courses in the Day School, thus procuring for the students intimate contact in the class room with the judges and active practitioners.

The attendance at the school has, up to the present, continued at the high rate shown in the last report. For the session of 1924-25, the enrollment was 550. For the year 1925-26 there were 596 students. This included a registration of 200 in the first-year class of the new four-year Evening School, and of 71 in the first class of the new Day School. With higher entrance requirements these figures, will of course, be materially reduced. The reduction in the number of students does not, however, alleviate the needs for additional physical accommodations as set out in the last report. The condition of the Library remains the same as stated therein. The present Library is totally inadequate for the needs of the students. With the increase in the number of classes from three to seven, additional class rooms become imperative. I respectfully refer you to the needs set out in the last biennial report, and urge that consideration of them be promptly given.

Respectfully submitted,

HENRY D. HARLAN,
Dean.

The Dental School

In the past two years the School of Dentistry has experienced a complete reorganization and revision of policy. The merger of the interests of the Dental Department of the University and the Baltimore College of Dental Surgery created conditions which necessitated liberal adjustments to meet the larger demands while the present advanced standards of dental education imposed a definite change of general policy. A further increase in requirements in dental education, which adds an extra year of collegiate study for graduation in dentistry, makes further expansion and improvement in buildings and equipment imperative if the Dental School is to take rank with other schools of the University.

Dental students are now instructed in three separate buildings. All clinic service, technic laboratories and one class room are in the main dental building. Science laboratories and class rooms in the building known as the Church Building, immediately to the north of the main dental building, are used jointly by the departments of Dentistry and Pharmacy. A newly acquired building, located at 6 and 8 South Greene Street, provides a library, class rooms, science laboratories and dissecting room, and will be used jointly by Dentistry and Pharmacy.

Beginning with the regular session of 1926-1927 the Dental School will require a five-year course of instruction for graduation. This conforms to the recent edict of the Dental Educational Council of America. The first year of this course will be devoted almost entirely to academic instruction consisting of thirty-two semester hours of arts and science work and four semester hours of dental science. The second year will present a majority of dental science subjects in addition to sixteen semester hours of arts and science instruction. This totals forty-eight hours of academic work of university grade given under the direction of the Department of Arts and Science of the University.

A diligent effort has been made to adapt all forms of instruction to recognized standard requirements. Students are grouped in sections and scheduled under specified instructional requirements per unit group of students. While this policy is adhered to the facilities for conducting laboratory periods in over scheduled laboratories are inadequate. Relief in this respect can only be hoped for in providing additional laboratories. Clinic facilities have been greatly improved in the past two years but are still inadequate to the needs of normal enrollment. This lack of facilities can only be corrected by building

an addition to the present infirmary which has been so urgently recommended by the Dental Faculty. Prior to the opening of the regular session of 1925-1926 new construction provided additional space for twenty new chairs for the clinic. Other new equipment was added totaling \$18,000, \$15,000 of which was appropriated by the State for the purpose. This has greatly increased the opportunity for more satisfactory work by the students in the clinic. A need for a reference library is keenly felt as an aid to students in their investigations.

The teaching staff has been greatly augmented in the past two years notwithstanding the fact that the enrollment has varied but slightly. In 1923-1924 there were thirty-four teachers and 456 students in the department; in 1924-1925, fifty-four teachers and 470 students; in 1925-1926, sixty teachers and 488 students. In 1923-1924 there were five full-time instructors; in 1925-1926, ten full-time instructors.

The financial success of the Dental School is well known. It might be pointed out that a surplus has been accumulated through a too large enrollment which creates a condition of quantity production. This may be illustrated as follows: In 1922-1923, with an enrollment of 246 students, the cost of instruction was \$347.00 per student. In 1923-1924, with an enrollment of 456, the cost of instruction was \$291.00. Since the enrollments for the future are steadily declining and the average cost of instruction will correspondingly increase, any surplus in the future may not be anticipated.

Additional space with adequate equipment is the greatest present need.

Respectfully submitted,

J. BEN ROBINSON,
Dean.

The Registrar's Office, College Park

To the President of the University:

The following statistics show the total registration of students during the triennium, 1924-25 to 1926-27, as of October 4, 1926:

	1924-25	1925-26	1926-27
		(a)	(b)
College of Agriculture	266	208 ¹	—129 ² 120 ³
College of Arts and Sciences	354	474 ⁴	—458 ⁵ 495 ⁶
School of Business Administration	620 ⁷	341 ⁸	—152 ⁹ 395 ¹⁰
School of Dentistry	479	488	—488 395 ¹¹
College of Education	412 ¹²	231 ¹³	—118 ¹⁴ 127 ¹⁵
College of Engineering	209	405 ¹⁶	—212 ¹⁷ 329 ¹⁸
Graduate School	75	113	—113 92
College of Home Economics	24	34	—34 46
School of Law	550	596	—596 452 ¹⁹
School of Medicine	354	372	—372 371
School of Nursing	99	76	—76 110
School of Pharmacy	228	234	—234 277
Summer School (College Park)	486	454	—454 477
Summer School (Baltimore)	52	36	—36 15
Gross Total	4208	4062	3472 3291
Duplications	162	101	101 65
Net Total	4046	3961	3371† 3126‡

¹ Includes 390 extension students.

² Includes 313 extension students.

³ Includes 79 short-course students.

⁴ Includes 16 extension students.

⁵ Includes 189 extension students.

⁶ Includes 113 extension students.

⁷ Includes 193 mining course students. (Previously combined with College of Education.)

⁸ Does not include short courses, which begin later in year.

⁹ Does not include extension courses, which begin later in year.

¹⁰ Discontinued June, 1926, merged with Johns Hopkins University.

¹¹ Baltimore College of Dental Surgery students graduated. Five-year course now in operation.

¹² Does not include extension courses, which begin later in year.

¹³ Does not include mining courses, which begin later in year.

¹⁴ Prelegal collegiate requirement in effect.

¹⁵ Discontinued 1926.

¹⁶ Extension enrollment deducted, 1925-26.

† Total regular students 1925-26. (Includes School of Business Administration registration, both regular and summer sessions. Without these figures the total, 3183 (3371—188=3183), is comparable with 3074 for 1926-27.)

‡ Does not include extension student enrollment.

The double column of figures under the year 1925-26 is to show (a) the total registration in the institution, and (b) the number of degree students in the several colleges and schools at College Park and in Baltimore. As the extension classes for the current year will not be organized until later, the total enrollment for 1926-27 cannot be shown now.

The total of column (b), 1925-26, is more comparable, therefore, to the total for 1926-27. Neither has any figures for extension students. To make a comparison that is even more fair between the two totals, the enrollment in the School of Business Administration, both regular and summer sessions, must be deducted from the 1925-26 total. This School was discontinued June, 1926. It was merged with the School of Business Economics, Johns Hopkins University.

By referring to the footnote (§) under the registration table, you will see that the 1925-26 figure 3,183, is matchable with the total 3,074 for 1926-27.

The Schools of Dentistry and Law show a noticeable decline in the registration for 1926-27. In the case of the School of Dentistry, there is what can be called a double enrollment loss. The first is that the last class in the Baltimore College of Dental Surgery was graduated in June, 1926, and the second is that the course in dentistry was raised from four to five years, beginning with session 1926-27.

When the School of Law raised its preprofessional requirement beyond graduation from high school it was expected, as in the case of the School of Dentistry, that there would be a smaller entrance class for several years. The one-year college requirement is effective this year. For 1927-28, and thereafter, there will be a minimum two-year collegiate requirement for degree students in law.

Before the end of the current year, the registration in the Graduate School will be much larger than it is now. It may reach the 1925-26 figure. There is always a heavy late enrollment.

Agriculture shows a slight loss. This condition is nation-wide.

The difference between the total registration for 1924-25, and 1925-26, is negligible.

The total enrollment for 1920-21, the first year of the new University of Maryland, was 1,833.

A tabulation of the number of degrees and certificates issued by the several colleges and schools of the institution for the period 1921-26, inclusive, follows:

	1921	1922	1923	1924	1925	1926	Total
Honorary:							
LL.D.	2	2	3	2	.....	.....	9
D.Agr.	3		1		.....	.....	4
D.Sc.		1	3		1	.....	5
D.Eng.		2		1	1	.....	4
D.Litt.			1	1		1	3
Phar.D.				1	.....	.....	1
Total	5	5	8	5	2	1	26

Agriculture:

B.S.	9	19	18	27	35	33	141
2-yr. Cert.	5	3		1	4		13
Vet. Bu. Cert.		11	10				21
Total	14	33	28	28	39	33	175

Arts and Sciences:

B.S.	5	16	24	17	16	10	88
B.A.	5	2	16	17	25	28	93
Total	10	18	40	34	41	38	181

Business Adm.:

B.S.						4	4
B.B.A.				7	3	3	13
B.C.S.	4	13	13	9	16		55
Cert. Prof.	5	15	4	13	14		51
Total	9	28	24	25	37		123

Dentistry:

D.D.S.	32	29	45	99	116	115	436
Total	32	29	45	99	116	115	436

Education:

B.S.	4	8	12	13	11	11	59
B.A.	1		2	8	9	14	34
Ind. Cert.					8	4	12
Total	5	8	14	21	28	29	105

Engineering:

E.E.					1	1	2
M.E.				1			1
C.E.		1			2		3
B.S.	15	14	19	20	35	25	128
2-yr. Cert.	1						1
Total	16	15	19	21	38	26	135

Graduate:

Ph.D.	1			1	5	6	13
M.S.	7	6	16	30	10	24	93
M.A.			2	3	4	14	23
Total	8	6	18	34	19	44	129

Home Economics:

B.S.	1		2	6	1	2	12
Total	1		2	6	1	2	12

Law:

LL.B.	33	73	91	99	115	119	530
Total	33	73	91	99	115	119	530

Medicine:

M.D.	71	56	50	78	83	70	408
Total	71	56	50	78	83	70	408

Nursing:

G.N.	17	9	21	32	15	19	113
Total	17	9	21	32	15	19	113

Pharmacy:

Phar.B.			1				1
Ph.Chem.		1	1	1	2	1	6
Phar.G.	33	28	39	65	51	76	292
Total	33	29	41	66	53	77	299
Total	245	290	405	547	575	610	2672

College Park Schools, 753; Baltimore Schools, 1,919.

Respectfully submitted,

W. M. HILLEGEIST,
Registrar.

The Extension Service

To the President of the University of Maryland:

The past three years in the agriculture of Maryland have been marked by a slight improvement in prices of agricultural products and a gradual recuperation from the post-war deflation which so seriously affected agriculture in 1920. Our diversification in crops, together with nearness to markets, has enabled our farmers to fare better than those in less chosen localities.

We have been blessed for the most part with bountiful crops and had prices been more favorable or consistent with the prices the farmers have had to pay for materials and labor, our people would have experienced a prosperous period. Fortunately economic conditions in the industrial field in the East have been prosperous and this condition has greatly aided the agricultural condition from the standpoint of demand for food products. There still exists a great disparity between the prices for products that the farmer is compelled to pay and the price he receives for the products sold. This is an outstanding economical problem involving the disposal of surplus agricultural products and the leveling of labor and other costs so that agriculture may compete successfully in the field of production. The economic stress imposed upon farmers by virtue of this situation during the past three years has had a stimulating effect in emphasizing the importance of economical production and the proper adjustment of farm operations and the application of modern methods of practice in accordance with the finding of agricultural research that will prove of inestimable value to the industry.

Thus during the past three years there has been an unusual demand made upon the Extension forces to meet the needs of the farmers for assistance in readjustments in farm operations and especially to increase yields and lower costs. It may be stated that perhaps there has been greater progress in this State during the past three years in the selection of varieties of seeds, plants and animals looking toward increased yields and more economical production of products than in any former period. The policy of the Service has been to emphasize these fundamentals together with the promotion of cooperative activities among farmers and farmers' organizations. We believe in cooperative marketing of agricultural produce where it can be practiced with efficiency and along sound business lines. We believe that we must have cooperative production in any commodity before we can progress very far successfully in the cooperative marketing field. Commendable progress has been made in the State along these lines, but naturally it will take some time and intensive effort to bring about this result in many of our agricultural products.

PROGRESS OF EXTENSION SERVICE

Commendable progress has been made in the development of Extension Service work in the State. A county agent has been maintained in all counties of the State since 1917. In this respect Maryland has made an outstanding record, few other States having a county agent in all counties. In addition, home demonstration agents are now serving in all but three counties of the State. In this particular the Maryland Extension Service is outstanding in its efforts to assist the rural women and improve the rural home.

Since the establishment of Extension Work in Maryland, it has been supported entirely by public funds. This policy was early adopted as the one best calculated to serve the aims of Extension Work and to produce the most satisfactory results. Other States which inaugurated the work upon a different basis are gradually adopting this plan.

In no other State of the Union has this system of Extension Education been better received, more thoroughly established and so reasonably supported as in Maryland. As an evidence of the appreciation of the Extension specialists and agents practically all counties in the State have increased their share of appropriations for the support of this work during the past two years. The interest of the people is shown by the attendance of more than 100,000 rural people at the field demonstrations and meetings conducted by agents in 1925.

PROGRESS IN MARKETING

The marketing work of the Extension Service during the past three years has been continued along lines designed to encourage cooperative marketing, to improve the quality of Maryland products going to market, and to remedying wherever possible unfavorable market conditions.

Splendid strides have been made in the development of cooperative marketing in the State during the period. Assistance has been given in organizing and directing cooperative associations or groups handling dairy products, poultry products, tobacco, canning crops, live-stock, wool, orchard fruits, vegetables, seed potatoes and minor special crops.

It is estimated that cooperative sales through farmers' organizations in the State exceed \$20,000,000 annually. The bulk of this business is being done by the three large dairy marketing organizations and the Maryland Tobacco Growers' Association. It is acknowledged that these cooperatives are among the outstanding successful ones in the country. In numerous ways the Extension Service has aided these established organizations.

The more important recent developments in the field of marketing have been the establishment of poultry marketing pools in several

counties of the Eastern Shore, the formation of cooperative canneries, the organization of a State Wool Pool and the organization of the State Department of Markets.

STATE DEPARTMENT OF MARKETS

The appropriation of \$10,000 by the last Legislature made possible the inauguration of marketing work along several important lines. It was necessary, however, to establish a State Department of Markets with regulatory powers delegated by the State Board of Agriculture. The new department was created in 1924 by Act of the State Board of Agriculture and the President of the University of Maryland. Dr. F. B. Bomberger, assistant director of the Extension Service, was appointed chief of the new department. Thus the State Department of Markets was set up as a department with definite regulatory powers operating in close harmony with the Extension Service and under its administration.

With the creation of the State Department of Markets, it was possible to inaugurate in the State in cooperation with the United States Department of Agriculture shipping point inspection service. This work, begun in the summer of 1924, developed into large proportions last year, starting with the inspection of strawberries and continuing with various crops until November 7. During the inspection period, 1,325 carload shipments were examined at thirty-three loading points at the request of growers and shippers. Inspections were made on strawberries, Irish potatoes, apples, sweet potatoes, peaches, cucumbers, cantaloupes and early tomatoes.

The inspection work is increasing this year (1926), but the total number of cars, commodities and shipping points will not be available until the end of the season.

The State Department of Markets was authorized during 1925 to exercise the authority vested by law in the State Board of Agriculture for the inspection, regulation and adjustment of scales, beams, weights and measures used in the several counties of the State and in the City of Baltimore in the vending or purchasing of agricultural products and farm supplies.

The State Department of Markets also has issued a monthly news letter, giving information on various phases of marketing and for a while published a weekly summary of prices of farm products in a number of counties of the State.

INCREASING YIELD OF CORN

Substantial progress has been made in improving the quality and yield of the State's most important crop, corn. While in 1922 the average yield amounted to the top figure of 40 bushels per acre, last year (1925) the State average per acre reached the surprising amount

of 45 bushels per acre. Ever since 1890, when the average yields of corn per acre in Maryland were between 20 and 25 bushels, Maryland farmers have steadily and consistently responded to educational influence by improving the quality of their seed and their methods of culture, with the unusual yield all over the State last year.

Side by side with the progress which has been made by the average grower is the no less noteworthy achievement which has been accomplished in the production of seed corn. The quality of corn produced in the State last year is estimated to be five per cent higher than the average for the preceding ten-year period and this was reflected in the splendid showing made by Maryland growers at the International Grain and Hay Show held in Chicago last December. Thirty-two prizes, including the sweepstakes prize for the best single ear in the show, were awarded to Maryland growers. The awards included fifteen of the forty offered for ten-ear exhibits of yellow dent corn and seven of the forty offered for ten-ear exhibits of white corn. In addition nine of the fifteen available premiums in the single-ear class and the first place in the class open to 4-H Club members were awarded to Maryland entries.

When it is remembered that the State on the average plants 568,000 acres to corn a small increase on the yield per acre means considerable to our farmers. On this acreage Maryland growers raised 25,560,000 bushels in 1925, or 11,360,000 bushels of corn more than would have been possible in 1890 on the same acreage. Even at the low farm price for last year this crop alone produced an increased revenue of \$7,952,000.00. The increased yield of five bushels per acre since 1922 shows an increased production of 2,840,000 bushels with approximately \$2,000,000.00 at the farm price prevailing December 1st, 1925.

WHEAT PRODUCTION IMPROVES

Efforts of the Extension Service to improve wheat production in the State have been directed chiefly to encouraging farmers to plant varieties best adapted to their respective localities and to increasing local sources from which high quality seed might be obtained as shown by results of Experiment Station work.

Growers of good seed wheat have been encouraged to have their fields examined with a view to having it certified. In 1925 requirements for the production of certified seed wheat were revised. Numerous fields were inspected for farmers under the revised requirements but no seed was certified due to the prevalence of smut. Production of high quality seed, however, has increased in the State and has had its effect in improving quality and yields. The average production for the year, 1925, was twenty-one bushels to the acre, the highest since 1914.

EXPANSION OF LEGUME CROPS

Continued interest has been shown in legume production during the three-year period. There has been some increase in plantings and farmers have gained a better appreciation of legume crops and a more definite knowledge of their utility.

DAIRY INDUSTRY AIDED

Extension Service work has been an important factor in improving the dairy herds of the State and in lowering the costs of milk production. Herds have been improved through the introduction of purebred dairy animals and through the elimination of low producing cows as revealed by cow testing associations. Methods of feeding and management also have been improved and have contributed to more economical production.

In the counties where testing for the eradication of bovine tuberculosis has been under way, the Extension Service has cooperated with regulatory officials in every way possible to make the results effective. Attention has also been directed to the many details connected with the opening of new milk producing territory supplying the Philadelphia market.

Progress of an important character, too, has been in improving the quality of the milk reaching the Baltimore market. To achieve this, better methods of producing milk on the farm, more care in handling and in transporting and improvements in distribution were necessary.

Splendid results were obtained, however, through the cooperation of the Baltimore City Health Department, the Maryland State Dairy-men's Association, the Baltimore distributors, the transportation agencies, the Extension Service and the producers. The combined efforts of these agencies brought about a materially reduced bacteria count in the milk reaching Baltimore and this result was achieved harmoniously and without resort to drastic measures.

PUREBREDS INTRODUCED

Introduction of purebred animals, particularly sires of good breeding, has resulted in the placing of hundreds of good dairy animals on farms of the State. Through the 4-H Club work alone approximately five hundred purebred dairy animals have been added to the State's list of registered dairy cattle. Through cow testing associations, breed associations, feed schools, purebred sire campaigns, etc., the dairy industry has made marked advance. In addition to work along these lines, the Extension Service has been able to aid the three large cooperative milk marketing associations operating in the State and doing an aggregate annual business of approximately twelve million dollars.

DAIRY CATTLE JUDGING TEAM

In connection with the dairy industry, it is gratifying to report the success of Maryland 4-H Club boys in the national dairy cattle judging contest at the National Dairy Show in Indianapolis October, 1925. The State contest is held in connection with Timonium Fair which provides excellent facilities for the State contest and finances the team to the National Dairy Show. This year's team, the third Maryland team to win a National judging contest, defeated teams from twenty-one other States with a margin of 137 points over the nearest competitor. The team thus was eligible to compete in the International contest at the English Royal Stock Show in England the past summer. It is the third Maryland team to have this distinction.

CANNING CROPS

The importance of canning crops in Maryland and the necessity for practical measures which would increase their profitableness to growers and canners alike have been the factors back of the Extension Service Work in this field.

Plant bed demonstrations, designed to show farmers proper methods of production and at the same time supply plants of superior quality, have been conducted throughout the tomato growing territory during the past three years. The work has so grown in importance and results have been so apparent that the interest of both canners and growers has been definitely enlisted. More than five million tomato plants were grown and distributed from twenty-six beds in nine counties during 1925.

In cooperation with the Tri-State Packers' Association splendid results have been secured in saving selected seed. Through special effort last year about 2,700 pounds of tomato seed were saved and prepared for distribution to growers throughout the State. This project was an outstanding success.

Other canning crop work in the State has consisted of efforts to improve production and quality of sweet corn and peas, aiding in the organization of cooperative canneries.

HORTICULTURAL WORK

Extension Work in Horticulture during the past three years has been directed to improving methods of production and marketing. A special spray service has been inaugurated and maintained each year, reaching 2,800 growers annually and supplying them with more accurate information regarding disease and insect development and the most effective time for applying sprays.

Numerous demonstrations in pruning and fertilizing have been conducted throughout the State. Efforts have been directed to the establishment of community packing plants in sections where a num-

ber of growers can avail themselves of such units. Considerable headway has been made in convincing growers of the value of careful grading and packing and Maryland fruits have been moving to market in improved condition.

Steady improvement is being made in the production of vegetable crops. More than 15,000 bushels of potato seed were grown and certified in 1924. In the trucking sections of Baltimore County the introduction of disease resistant cabbage has been of great value.

INSECT AND DISEASE CONTROL

The Extension Service has made every possible effort to aid growers in the control of disease and insect pests by conducting numerous demonstrations throughout the State and by supplying timely information on the development of crop pests and methods of their control.

The development of a spray service, based on actual orchard observations, has been of inestimable value to fruit growers and has greatly increased the efficiency of orchard spraying.

In the truck producing areas of the State, the Extension Service has conducted numerous demonstrations to show methods of controlling such insect pests as pea aphid, cucumber beetle, cabbage aphid, etc. Last year considerable work was necessary to combat the potato tuber moth which made its appearance throughout the early potato producing territory of the Eastern Shore.

Effort to control plant diseases have been directed mainly against corn root rot, wheat smut, apple scab, potato wart, wildfire of tobacco, cabbage yellows, etc. Results in the control of corn root rot by seed selection, in the control of cabbage yellows by the introduction of resistant varieties, and in the control of tobacco wildfire by seed bed sterilization and spraying, have proved particularly valuable.

STATE HORTICULTURAL DEPARTMENT

In addition to work performed by the Extension Service in controlling insect and disease pests, the State Horticultural Department operating under the Extension Service administration, has rendered valuable assistance to the farmers of the State.

The State Horticultural Department was created by the Legislature of 1898 for the purpose of aiding the fruit growers and farmers of the State in the control of insect pests and plant diseases affecting all kinds of crops.

The work of the Department has been conducted as in former years in close cooperation with Extension Service activities, the Extension Plant Pathologist assisting the State Plant Pathologist and the State Entomologist in the work.

An important feature of the work imposed upon the State Horticultural Department is the annual inspection of all nurseries in the State. Seventy nurseries were inspected during 1925 while much imported nursery stock was examined. This particular phase of the work is of great importance, protecting growers from imported pests and from native insects and diseases which might spread through nursery stock.

A careful watch has been maintained on the spread of the Japanese beetle, the European corn borer and the Mexican bean beetle in adjoining states and as yet these destructive insect pests have not been found in Maryland.

The potato tuber moth, another destructive insect, appeared in the State in 1925 and caused considerable damage to the late potato crop. Every effort was made to acquaint growers with methods likely to check the spread of this pest. During the spring of 1926, no live tuber moth was found in the invaded area but there is no certainty that the pest will not appear again within the borders of the State.

The regular inspection of orchards and the control of various pests affecting fruit and farm crops has been prosecuted by the officials of the Department. Investigations and surveys looking toward the control of several insect pests and plant diseases are now in progress.

LIVESTOCK INDUSTRY

While there has been no very notable expansion in the sheep, cattle, swine and beef cattle industries in the State during recent years, there has been considerable progress made in improving methods of production and management.

The sheep industry has shown the greatest response to efforts put forth. In Southern Maryland where the production of early lambs has become a well developed business, building up of flocks through the introduction of purebred rams and ewes has been insured. The result has been a notable increase in number of purebred sheep in this territory and corresponding improvement in quality of lambs produced. In other sections of the State the introduction of purebred rams and ewes has gone steadily forward so that the State in the past three years has greatly increased its proportion of purebred sheep.

Similar effort has been devoted toward improving the swine industry. During 1925 the ton-litter contest was conducted under the auspices of the Swine Growers' Association in cooperation with the Extension Service.

Hog cholera in the State, while not an Extension project, has nevertheless received the active cooperation and support of the Service. County agents and livestock specialists have worked in cooperation with the regulatory authorities in charge of hog cholera control.

Sanitary measures particularly have been stressed as a means of controlling the disease and results have been most satisfactory.

There has been some work devoted toward improving our beef feeding industry, but economic conditions have prevented much expansion in this direction.

POULTRY HUSBANDRY

There has been a steady growth of the poultry industry in the State during the past three years with the result that Extension activities in this field have been greatly increased.

Considerable emphasis has been placed upon culling as one means of achieving economical production. Culling demonstrations have been given in practically all the counties of the State and in some cases, demonstrations have been conducted to show the difference between selected and culled stock. In nearly every case these have been convincing. Culling, however, has been advocated as a continuous process and not as a once-a-year practice.

Proper feeding has been emphasized, particularly in connection with the culling demonstrations. The relation between high production and efficient feeding has been pointed out and the scientific principles have been explained. Particular attention has been given to the farm flock.

Incubation, brooding and rearing of young stock have been subjects upon which the specialist has given advice and help during the period at numerous public meetings and by personal visits to farms. Plans for the erection of suitable poultry houses also have been supplied to many producers who have sought improved conditions.

In the marketing of poultry and poultry products, efforts have been made to acquaint poultry producers with market requirements, to interest them in cooperative shipments wherever possible, and to stimulate interest among commercial poultry producers in cooperative marketing, particularly through the Atlantic Coast Poultry Producers' Association. Several most successful cooperative shipments of dressed poultry have been made from Eastern Shore points and there is a possibility of similar enterprises in other counties.

Poultry projects among club members have been encouraged and there has been a most encouraging development in this field. The training of club members in the judging of poultry promises increased interest among the boys and girls.

FORESTRY

Extension work in forestry has gained considerable headway in the past three years by the assignment of a specialist to this particular work and by the increasing interest of farmers and woodland owners in timber production.

The work has progressed most satisfactorily and has consisted chiefly of forest examinations, demonstrations in re-planting cut-over or waste land and in thinning over crowded stands.

In 1925, fourteen planting demonstrations, involving 29,200 forest trees were conducted in eight counties of the State. In addition, plans were prepared for farmers who desired to make forest plantings. Woodland examinations during the year totaled 73 and covered approximately 6,130 acres of land. Eighteen thinning demonstrations in eight counties were conducted.

An interesting demonstration was started with 4-H Club members of the 185-acre tract purchased as a permanent site for the Harford County Club Camp. The demonstration not only served to interest club members in forestry but also to acquaint Harford County land owners with the possibilities of forest management.

HOME DEMONSTRATION WORK

A growing appreciation of home demonstration work and a better understanding of its aims and purposes in promoting improved rural home and community life have been apparent during the past year. Its sphere of usefulness has steadily expanded and generous appropriations from county sources indicate an increasing recognition of its value. More than six thousand women are organized along lines best calculated to serve the needs of rural community life. Well-planned projects in food and nutrition, clothing, home health and sanitation, household management and home furnishing, gardening, poultry and income earning enterprises, have formed the basis of the past three years' work in these clubs.

Community activities have also been noteworthy in several counties where clubs have federated into county organizations. These clubs have taken much interest in cooperating with the Home Demonstration Agent in preparing attractive exhibits at many of the county fairs. They have interested themselves in Better Homes Week and in other ways attracted the attention of the rural people to the problems surrounding the improvement of rural homes. The home demonstration agents have worked with these organizations, farm bureau organizations and with granges where it was possible for this character of work to be conducted. There is a greater interest among women in Extension Work today than ever before in the State.

RURAL WOMEN'S SHORT COURSE

An important development of the past three years in vitalizing home demonstration work has been the annual Rural Women's Short Course at the University of Maryland. The first Short Course was attempted in June, 1923. Attendance reached the unexpected and encouraging figure of 247. Enrollment has shown a substantial increase each year, reaching 342 during the 1926 course.

Primarily, the purpose of the Short Course has been to provide a brief and intensive period of instruction in such subjects as clothing, foods, household management, canning, house furnishing, health, home dairying, millinery, poultry raising, music appreciation, and parliamentary law. Incidentally, it has provided a means for rural women to become familiar with the University of Maryland and its services and at the same time has afforded an opportunity for social contacts and a broadened outlook on life.

It is interesting to observe that fifty-one women found sufficient value and inspiration in the Short Course to attend it for four consecutive years and in June, 1926, were awarded certificates attesting their interest. The oldest member of this class was seventy-five years and the youngest twenty-two, showing the wide range of appeal.

BOYS' AND GIRLS' CLUB WORK

A steady growth in boys' and girls' club work has been made during the past three years. More than 5,000 boys and girls are engaged in practical demonstrations with crops, livestock and home projects. This work has been the means of developing a large number of local leaders who assist in club work.

Club Week at the University of Maryland has been continued as an annual event and club members have taken an active part in national events connected with the National Dairy Show, Eastern States Exposition, International Livestock Show and the Madison Square Garden Poultry Show.

The work has had the support of the State Bankers' Association and other organizations and individuals.

The outstanding feature of club work during 1925 was perhaps the victory of the State team at the National Dairy Show.

PRINTING AND DISTRIBUTION OF PUBLICATIONS

During the past three years the Extension Service has published 12 bulletins, aggregating 48,000 copies and 18 circulars, information cards and spray calendars, totaling 50,800 copies. Mimeographed news letters and other mimeographed informational material have been prepared and distributed from time to time.

The Extension Service News has been issued as a monthly publication and has been sent to a mailing list of approximately 3,500 people. News bulletins for the daily and weekly press and special articles for farm papers have also been used to give information to the people of the State on agricultural and home economic subjects.

GENERAL EXTENSION WORK

The work under general educational extension includes the supplying of motion picture films, special lectures and correspondence

courses. The latter, due to lack of funds, has not been extended during the past three years.

The Public Discussion League has been conducted with most excellent results. Its purpose has been to encourage debating contests among high school students.

While there have been no special funds to develop a systematic program of radio broadcasting through the cooperation of a local station, a series of talks are being broadcast this year.

BANKER-FARMER PROJECTS

Some very valuable results have attended the efforts of the Extension Service, the Agricultural Committee of the Maryland State Bankers' Association and the Agricultural Commission of the American Bankers' Association to interest banks and bankers of the State in constructive agricultural projects. Ways in which local banks might assist in the development of agriculture in their communities were outlined and mailed to the banks in the State. The Maryland State Bankers' Association has continued its interest in boys' and girls' club work and has contributed toward its advancement. In many counties, banks have lent their individual support to club work and have aided in other ways constructive agricultural programs. More than sixty-two banks in sixteen counties of the State have lent their aid and support in one or more ways to projects suggested by the committee.

SOUTHERN MARYLAND IMMIGRATION COMMISSION

During the three-year period, the Southern Maryland Immigration Commission has continued in operation and has been given the support of the Extension Service in its various activities. The Extension Service has assisted in the preparation of exhibit material which has been shown at leading fairs and expositions throughout the country, has aided in the preparation of advertising literature and has assisted materially, whenever possible, in placing desirable farmers in the Southern Maryland counties. The work of the commission has been instrumental in advertising the State and its resources and in attracting attention to the undeveloped areas of Charles, St. Mary's, Prince George's and Calvert Counties. Since the fall of 1925, the work of the commission has been supervised by the Director of Extension.

ORGANIZATIONS SHOW PROGRESS

The period has been a most satisfactory one from the standpoint of farm organization. Some new organizations of local importance have been formed and there has been steady progress in the work of established farm associations. Relations between the State Grange and the Maryland Farm Bureau Federation have been definitely out-

lined through mutual agreement and have been most harmonious. Cooperative buying and selling organizations have continued in successful operation and have so strengthened their positions as to show every evidence of increasing usefulness to the farmers of the State. Relations of the Extension Service to all organizations have been most cordial and cooperative.

ADMINISTRATION

There have been no changes in the administrative system of the Extension Service during the three-year period. The need for more careful and frequent supervision of the agents continues as a pressing problem. Dr. F. B. Bomberger, Assistant Director, and Miss Venia M. Keller, State Home Demonstration Agent, have aided the Director in supervising the work of both specialists and agents, but it is manifestly impossible for present forces already burdened with many details, to give the careful supervision that is desired. The work of the Extension Service would be materially strengthened if a District Agent, devoting his entire time to visiting and assisting agents in planning and carrying out their work, could be provided.

EFFICIENCY OF WORKERS

It has been possible to increase the efficiency of the Service by conferences of both agents and specialists. District conferences have been held periodically to give agents an opportunity to discuss their problems and exchange views. An annual conference of all members of the Service has been held for the purpose of comparing methods of work and planning programs. A monthly conference of specialists has been held at headquarters and has proved valuable in keeping the members of the staff acquainted with the progress of the work in all lines.

Both specialists and agents have been encouraged, so far as available funds would permit, to attend conferences and meetings for self improvement. A number of the county agents were able to attend the American Institute of Cooperation held in Philadelphia during 1925. One of the agents was granted a year's leave of absence for graduate study.

OFFICE SYSTEM

At headquarters the system of records and financial accounts has been handled most satisfactorily under the supervision of Miss K. G. Connolly, administrative assistant and chief clerk. The office organization is efficient but additional assistance is needed to facilitate the stenographic and clerical work necessary.

COOPERATIVE RELATIONS

The relation of the Extension Service to other divisions of the institution is cordial and cooperative, and there has been developed a closer relationship between the Extension Specialists and the subject matter departments. The relation of the Extension Service to farm organizations in the State is likewise sympathetic and cooperative. It is the policy of the Extension Service to enlist the support and active participation of all existing farmers' organizations in projecting and carrying out Extension work; and it has been equally true that farmers' organizations have asked the counsel and assistance of the Extension Service in all enterprises of importance.

EXTENSION REVENUE

During the year ending June 30, 1926, there were available the following funds for Extension work: Federal Smith-Lever, \$56,287.11; State Smith-Lever, \$46,287.11; U. S. Department of Agriculture (regular), \$17,400.00; U. S. Department of Agriculture (Clarke-McNary Bill), \$1,500.00; Federal Smith-Lever Supplementary, \$14,676.40; County Demonstration Fund, \$50,000.00; State funds for general extension, \$15,000.00; State Horticultural Fund, \$12,560.00; Marketing Extension Fund, \$10,000.00; and \$56,000.00 contributed by the various counties; a total of \$279,710.62.

Estimates for the fiscal years 1928 and 1929 have included only such increases as seem to be necessary to provide for a reasonable growth of the Service and to meet the demands of the people. With funds now available, it is impossible for the Extension Service to expand its activities along several important lines and special work frequently requested by farmers, home-makers and farm organizations cannot be provided.

HOME DEMONSTRATION NEEDS

Additional funds are requested for the home demonstration work. Response of the farm women of the State to Extension work now under way, and demands for better trained women agents and for increased service justify a sum equivalent to that allotted for county agents. An increase to take care of this situation as well as some others is provided for in the County Demonstration Fund.

GENERAL EXTENSION FUND

A slight increase in the fund for General Extension is requested, part of which can be used for developing the women's work at headquarters. Improved service in the distribution of educational motion pictures, in providing suitable correspondence courses, and in making some provision for broadcasting through nearby radio stations would

be taken care of by additional funds. Other miscellaneous expenses, which cannot be paid from Smith-Lever Funds are met from the General Extension Fund.

HORTICULTURAL NEEDS

An increase of \$7,940.00 is requested for the State Horticultural Fund to provide improved spray service for the fruit growers of the State and to provide for work necessitated by the presence of the potato tuber moth and other insect and disease work in the State. A contingent fund of \$10,000.00 is also requested for emergency work that at any time may be necessary as a result of the invasion of such insect pests as the Japanese beetle, the Mexican bean beetle and the European born borer now present in adjoining states.

MARKETING DEMANDS

With the appropriation of \$10,000.00 by the last Legislature to provide for special work in marketing and the development of a State Department of Markets a new and vastly important field of service has been inaugurated for the benefit of farmers and cooperative marketing organizations in the State. With the limited appropriation only a start could be made in the important field of marketing. The shipping point inspection which was inaugurated by the State Department in cooperation with the United States Department of Agriculture during 1924 made tremendous growth during 1925. In all 1,325 cars of fruits and vegetables with an estimated value of \$1,187,077.25 were inspected during 1925 at a cost of about \$6,130.95. Additional supervisory assistance will be needed as the work develops. An increase of \$8,000.00 in this fund is urgently needed.

FUND FOR CANNING CROPS

Special request for \$10,000.00 to provide for work in connection with the important canning crops of the State is made. A splendid start which has enlisted the support of both cannery and growers has been made in this field by the Extension Service. Problems involved in the production of tomatoes, sweet corn and peas are commanding attention and must be met if this \$40,000,000 industry is to be maintained on a profitable basis. The Tri-State Packers' Association has passed resolutions urging the appropriation of \$10,000.00 by the State for this work.

EXHIBITS NEEDED

An appropriation of \$10,000.00 to be used in the preparation of suitable educational exhibits at fairs and other public gatherings is requested. At present there are very limited funds which can be devoted to this purpose, although there are constant requests from

rural people for exhibits at community shows, county fairs and State-wide fairs. It is felt that suitable exhibits are effective means of reaching many people and that the Extension Service program can be materially strengthened by a reasonable investment in exhibit material.

SEED CERTIFICATION FUND

The sum of \$3,000.00 for developing the Extension Service work in seed certification is requested. The Extension Service has encouraged the production of good seed and has promoted its use throughout the State. The results have been most valuable. The production of certified seed, however, calls for the establishment of standards, regulations and inspections. Requirements for the certification of seed wheat, seed potatoes and seed sweet potatoes have been formulated under a Seed Certification Board. It now requires adequate finances for travel and for other details of the work to develop this project effectively.

CONCLUSION

This report of the activities of the Extension Service for the period from September 30, 1923, to October 1, 1926, is necessarily summarized very briefly from the more detailed annual reports of the corresponding years.

We have a splendid force of men and women in the Service who are devoting their utmost energy and skill in rendering service to the rural people of the State.

The general conditions for Extension Work in the State are most favorable and the outlook is good. The increasing interest in cooperation among farmers will undoubtedly react to the advantage of all concerned. No State offers greater opportunities for the development of the agricultural resources than Maryland.

In the conduct of Extension Work there arise many emergencies necessitating calls for assistance from all divisions of the institution, especially the College of Agriculture and the Experiment Station. This Service is indebted to Dr. H. J. Patterson, Dean and Director, and to all other associates who have aided in the conduct of the work which is primarily to enable the institution to render its greatest service to the people of the State.

The Director and members of the Extension staff are deeply appreciative of the interest and cordial support given to our every undertaking by President A. F. Woods and the assistance and support given by Director C. W. Warburton and Dr. C. B. Smith and associates of the United States Department of Agriculture.

Respectfully submitted,

T. B. SYMONS,
Director.

The School of Pharmacy

To the President of the University:

The work of the School of Pharmacy during the past three years has been marked by a continual and united effort on the part of the members of its faculty to meet the instructional demands made upon them by the annual increases in the number of students enrolling in the course and because of changes in, and additions to, the curriculum made as a result of lengthening the course from two to three years to meet the requirements of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy. Up to the present time these new conditions have been met without any great impairment of the quality or quantity of instruction given, but the time has arrived when it is absolutely imperative that more laboratory and class room space and additional equipment be provided if these requirements are to be met and standard college work is to be done. Additions to the instructional force and a large appropriation of State funds will also be needed to adequately handle the work of the third year which will be given for the first time in 1927-1928.

For the session of 1922-1923 the enrollment was 145, for 1923-1924 it was 188, for 1924-1925 it was 228, and for 1925-1926 it was 234, which represents an increase of approximately 61% over a period of three years. It is believed that when work is given in all three years, an annual total enrollment of 250 or more students may be expected. This would mean a graduating class of about 50 each year, which it is believed will be none too large to supply the demands of the State for pharmacists on the present basis of absorption. According to information obtained from the State Board of Pharmacy, there are now approximately 1,200 pharmacists in the State of Maryland and an annual replacement of fully 5% may be looked for.

During the time covered by this report the School of Pharmacy has had available for its use a total of approximately 8,000 square feet of space, a large part of which it shared with the Schools of Dentistry and Business Administration. Of the total amount, 2,040 square feet was laboratory space located in the dental building and shared with the School of Dentistry, 1,800 square feet was class room space in the building occupied by the School of Business Administration on South Paca Street and shared with the Schools of Dentistry and Business Administration, and the remainder, 4,160 square feet, was laboratory, class room, office and stock room space located in the old church building on South Greene Street. With the discontinuance of the School of Business Administration and the giving up of the

lease on the quarters occupied by that school at the end of the last session, the School of Pharmacy lost 1,800 square feet of class room space which it was absolutely necessary to replace. Fortunately the University has been able to obtain, through the cooperation of a group of dentists and pharmacists, a lease on a warehouse building on South Greene Street, which is at present being fitted up for class room and laboratory work. In this building there will be available five class rooms, a laboratory for the teaching of physics, one for the teaching of pharmacy and one for the teaching of bacteriology and zoology, all of which, with the exception of the pharmacy laboratory, the School of Pharmacy will share with the School of Dentistry. There is also being fitted up in this building offices to accommodate the administrative personnel of the School of Pharmacy which is at present crowded into one small room in the old church building. With this additional space, the School of Pharmacy will be able to function for the coming year, but it is in urgent need of approximately 6,000 square feet of space for a dispensing and pharmaceutical manufacturing laboratory and an additional 8,000 square feet of space for laboratories to take care of the instruction in pharmaceutical and analytical chemistry scheduled to be given in the third year of the course. Provision should also be made for supplying as soon as possible laboratory space for the teaching of botany, pharmacognosy and materia medica, which is now being taught in one of the laboratories of the School of Dentistry and for which the latter has expressed urgent need. About 4,300 square feet of space will be required for this purpose. In these estimates, space for preparation and stock rooms has been included.

In this connection it is desired to emphasize the fact that the present arrangement is only temporary and when the warehouse building is given up and the laboratory in the dental building is no longer available, it will be necessary to find space for carrying on all of the work in pharmacy with the exception of the first and second year work in chemistry which is now being given in the old church building. It will be necessary, however, even in the event that this building is used solely for the work of the first two years in chemistry to make fairly extensive alterations and improvements in the building to meet the needs of the growing classes in pharmacy and dentistry as the laboratories located therein are already overcrowded.

In the past two years the School has received 15 to 20 applications annually from students who have desired to do graduate work in pharmacy. There is a considerable demand for these better trained men from the pharmaceutical manufacturing houses in this State, which the School has been unable to meet up to the present time because of the lack of the necessary laboratory facilities. Since the pharmaceutical manufacturing industry is a very important one in this State, it would seem that a serious effort should be made to provide the laboratories and equipment needed for giving advanced instruction of this nature.

For some years, the School of Pharmacy has assisted in the work done at the Hospital Dispensary. It was hoped that this work as well as that of the Dental Dispensary might be taken over completely, and that assistance might also be rendered other free dispensaries, public clinics and charitable institutions in the city, but the lack of suitable quarters and equipment for making the necessary pharmaceutical preparations and the inability of the staff of instructors to take on any additional work has made this impossible. It is hoped that a dispensing and manufacturing laboratory will be provided in the next two years so that our students as well as the public may have the benefit thereof.

In 1922-1923, the instructional staff of the School of Pharmacy consisted of 18 persons. During the past three years, the number has been increased to 24. A further increase will be necessary in the next two years to handle the third year of work in pharmacy and to provide adequate instruction for the greater numbers of students in the first and second year classes.

During the present triennium the School of Pharmacy has received \$10,000 annually from the State for maintenance and a total of \$10,000 for the purchase of special equipment over the three-year period. The annual appropriation was evidently made on the basis of a total enrollment of 145 students in 1922-1923. Inasmuch as the enrollment for 1925-1926 was 234, and a still further increase may be looked for in the next two years, it is believed that the State appropriation should be increased proportionately. This is essential if college standards in instruction are to be maintained. An additional appropriation for the equipment of the new laboratories and class rooms required will also be needed.

As in the past, the School has maintained close and friendly relations with the Maryland Pharmaceutical Association and the Board of Pharmacy as it is realized that through these agencies the real pharmaceutical needs of the State may best be sensed. In fact the request contained herein for additional space, equipment and financial aid has been made to meet the present needs of pharmacy as voiced by the first mentioned organization and the requirements of the latter.

Respectfully submitted,

A. G. DUMEZ,
Dean.

The University Hospital

A review of the activities of the University Hospital during the last three years must reveal one of general progress both from the physical arrangements of the hospital as well as the financial situation.

Owing to the generosity of His Excellency, the Governor, a sum amounting to \$75,000 was appropriated to correct many of the dangers from fire that were present. The staircases have either been inclosed with fire-resistant material or else new steel and concrete stairways have been constructed, thus providing an easy exit and at the same time doing away with clumsy outside fire-escapes which would otherwise be necessary. There have been other structural alterations made always with a viewpoint of lessening the fire risk. False ceilings have been removed, cupboards and smaller rooms done away with, and in each instance replaced with fire-resistant material.

A marked improvement has taken place in the Dispensary and now, although suffering from very overcrowded conditions, we feel that patients can be treated better than heretofore, and with the addition of paint and more fresh air conditions are pleasanter. The Medical Dispensary especially has been enlarged so that now we boast of a distinct medical diagnostic center—comprising in this group a waiting room, a five-cubiced examining room, a laboratory, a room for cardiology and electro-cardiographic studies, and a room for neurology and diseases of the chest.

The main kitchen has been thoroughly renovated, and a new vitreous tiled floor added so that now it can pass a reasonable examination.

During the last few months Ward I has had added to it a suite of offices and examining rooms owing to the generosity of the Baltimore & Ohio Railroad, and Ward I itself has been practically refurnished.

Although in a badly congested dispensary, it was felt that the fullest cooperation with the State should take place, so a considerable portion of the dispensary was devoted to the housing of the State Venereal Clinic.

In a further attempt to prevent fire dangers, and to provide ample exits, two fireproof elevators were provided which have been found particularly satisfactory.

To increase the laboratory facilities, and at the same time provide increased teaching accommodation, the main laboratory has been enlarged, rearranged and equipped; the students' laboratory has been

considerably enlarged, and a small special laboratory for internes has been added.

Recently owing to the University Hospital sharing generously in a Trust Fund, it has been possible to enlarge the Children's Ward. This was done by taking off a portion of the surgical amphitheater and constructing a ward containing 14 beds under modern conditions, with terrazo floor, metal cubicles and new equipment. No report can be complete without mention of the fact that our two great deficiencies lie in the accommodation for women and children. Although the new addition to the Children's Ward provides 14 additional beds, nothing has been added in the way of service for these children, and still there is no means of providing fresh air and sunlight by means of a solarium or outside porch. The Maternity Department is still deplorable and requires very distinct drastic action to allow us to offer reasonable accommodations and care for this particular class of case.

A very decided improvement has taken place in the financial situation of the hospital. At the commencement of the fiscal year 1923-24 the strictest economy was set in motion, and by a revision of rates as well as constant vigilance, the resources of the University Hospital were increased. Fortunately, and again owing to the generosity of His Excellency, the Governor, an additional appropriation of \$25,000 a year gave us an opportunity of maintaining the University Hospital free of debt, and since that time the hospital has been able to pay cost and prevent a deficit accruing at the end of each fiscal year. But it must be borne in mind also that although we have been able to maintain the hospital at cost, no means has been provided for enlarging or refitting the present hospital, save the minor improvements which take place from month to month.

At this time of writing we have received a full quota of nurses for the September class, and in fact are now in the position of refusing several other applicants for this fall. Unfortunately this success has to be deprived of its full value because it will require every available space in the hospital to accommodate this group, and nothing will be left for future classes.

From the financial statement which is inclosed herewith, the above facts as to the financial situation in the hospital can be reviewed, and from the statistics appended can be formed an idea of the very great activity taking place in this institution.

Respectfully submitted,

A. J. LOMAS,
Superintendent.

The Department of Forestry

The report of the State Department of Forestry prior to September 30, 1923, has been published and is available for general distribution. It may be well first to give a brief summary of the conditions of forestry in the State.

The forested area is approximately 2,228,000 acres, or 35% of the total land area. The work of the Forestry Department, of necessity, is mostly with the private woodland owner as the State owns less than 4,000 acres of State forests. The work is carried on under several headings, such as

Care of the Woodlands in Preventing Wasteful Cutting
and Bringing about the Growing of More Valuable Species.
Planting.

Fire Prevention Work.

Recreational Uses of the Forest.

Protection of the Roadside Trees.

Maryland is most favorably situated from the standpoint of timber growing and the Department is endeavoring to bring about better forest management through the adoption of approved systems of handling woodlands, better protection from fire and the putting of idle lands to work to the growing of timber.

The forestry resources of the State have been badly abused and the aim of the Department is to bring about better conditions. To this end the Department is striving to the limit of its personnel and funds.

The technical force of this Department is made of four. The State Forester, who is in general charge of all work carried on by the Department; the Assistant State Forester, who has charge of the State Forests and the operation of the Roadside Tree Law; one Assistant Forester, who has charge of the fire prevention work, and one Assistant Forester, who is also Extension Forester.

Assistance to Woodland Owners—Assistance to the woodland owners is brought about by means of examination of woodland holdings by a member of the Department staff upon request of the owner. These examinations are made with the owner or his representative and the owner's problems are gone over and recommendations are made right on the ground. A written report covering the conditions and recommendations is then submitted to the owner for his keeping. If during the course of the examination it is found that the trees are mature and ready for cutting recommendations of that effect are made.

The Department will, and does, at the request of the owner send a competent forester to mark the trees for removal, giving the owner a

detailed estimate of the amount of timber available and the valuation, and puts him in touch with the buyers.

If a marking is not necessary on account of the character of the trees, but the trees should be removed, an estimate is given. If waste land occurs, plans for reforestation are drawn up and the different species of trees and their spacing recommended.

In the period covered by this report 179 tracts have been examined in 23 counties and plans of management prepared totaling 17,495 acres. Of these 28 tracts have been marked in 15 counties totaling 2,097 acres. A total of four estimates without markings have been made covering 205 acres, and 12 planting plans have been made recommending the planting of 150,000 trees.

Forest Protection—The prevention and suppression of forest fires is one of the principal duties of the Department of Forestry. This has been steadily increasing in its usefulness despite the handicap of funds and is directly under the management of one of the Assistant Foresters. There are four District Forest Wardens located respectively in Oakland, Frederick, Waldorf, and Elkton. They work on part time, mainly during the spring and fall which are the two great fire seasons. Their work is primarily in supervising the work of the forest wardens, investigating violations of the forest laws and in educational work among the people of their community. There are a total of 11 lookout towers in the State located as follows:

County	Name of Tower	Location	Height Feet	Put in Operation
1. Garrett	Snaggy Mt.	Snaggy Mt.	60	1925
2. Garrett	Thayerville	Meadow Mt.	50	1921
3. Garrett	Bittinger	Meadow Mt.	60	1915
4. Allegany	Dan's Mt.	Dan's Mt.	Station Only	1921
5. Allegany	Warrior Mt.	Warrior Mt.	50	1922
6. Washington	Quirauk	South Mt.	80	1922
7. Frederick	Foxville	Catoctin Mt.	50	1920
8. Anne Arundel	Long Hill	Long Hill	60	1923
9. Cecil	Foy's Hill	Foy's Hill	50	1924
10. Frederick	Hamburg	Frederick	60	1926
11. Prince George	Muirkirk	Muirkirk	60	1926

The Hamburg Tower is on Frederick City land and was put up by the City of Frederick.

Each tower is manned by an observer during the fire season and is equipped with telephone and fire detection apparatus such as maps and range finders.

At present there are about 300 forest fire wardens throughout the State and it is their duty to suppress forest fires whenever they see one or one is reported to them by the lookout towerman or other individuals. The responsibility of the 2,228,000 acres of forest land is directly upon these men and under conditions such as existed this

spring and the spring of 1925, the organization is sadly taxed because of limited funds.

At present approximately $\frac{1}{2}$ c per acre per year is appropriated for forest fire prevention and suppression. This proves adequate under most favorable conditions and is entirely inadequate for such periods as above mentioned. At least $2\frac{1}{2}$ c per acre is needed to give any semblance of protection in any but the most favorable years. A summary of the fires by season is:

FALL, 1923

County	No. of Fires	Area Burned	Damage	Expense
Allegany	8	110	\$142.25	\$47.95
Anne Arundel	4	48	7.50	19.80
Baltimore	1	2	6.00	5.50
Charles	2	5	1.50	15.00
Dorchester	1	27	75.00	3.95
Frederick	4	231	698.00	51.15
Garrett	7	124	197.50	47.50
Montgomery	1	2	1.00	.....
Prince George's	3	45	65.00	6.70
St. Mary's	1	30	150.00	10.00
Talbot	4	82	640.00	23.80
Washington	5	88	228.00	45.15
Worcester	4	321	330.00	21.70
Total	45	1,115	\$2,541.75	\$288.20

SPRING, 1924

County	No. of Fires	Area Burned	Damage	Expense
Allegany	4	115	\$192.00	\$45.00
Anne Arundel	25	858	1,096.90	178.65
Baltimore	2	35	175.00	1.50
Cecil	2	800	3,500.00	16.25
Charles	1	50	750.00	2.75
Frederick	8	164	620.50	84.85
Garrett	21	1,073	2,832.00	114.60
Harford	3	261	1,205.00	2.50
Howard	2	1	8.00	1.00
Montgomery	2	18	151.50	10.00
Prince George's	6	255	1,280.00	32.00
St. Mary's	1	40	400.00	60.00
Talbot	3	6	65.00	6.40
Washington	8	95	522.00	74.65
Wicomico	3	410	655.00	32.45
Worcester	1	430	465.00	12.45
Total	92	4,611	\$13,917.90	\$675.05

FALL, 1924

County	No. of Fires	Area Burned	Damage	Expense
Allegany	46	4,795	\$15,448.00	\$693.18
Anne Arundel	7	24	92.25	39.60
Baltimore	8	748	577.00	22.50
Carroll	1	100	300.00	3.00
Cecil	8	2,259	10,230.00	.....
Frederick	18	4,973	9,237.50	478.86
Garrett	47	8,271	16,608.50	1,281.90
Harford	2	3	6,020.00	4.25
Howard	5	10	72.20	9.50
Montgomery	1	1	23.00	.....
Prince George's	10	69	172.00	48.80
Queen Anne's	1	200	1,000.00	.....
Washington	17	1,513	2,185.00	266.97
Wicomico	1	20	208.00	10.50
Worcester	2	277	850.00	48.00
Total.....	174	22,363	\$63,023.45	\$2,905.06

SPRING, 1925

County	No. of Fires	Area Burned	Damage	Expense
Allegany	58	9,191	\$20,711.50	\$969.55
Anne Arundel	41	4,172	34,496.25	442.75
Baltimore	25	501	1,562.75	21.50
Calvert	2	365	2,513.75	61.50
Cecil	30	1,490	7,232.70	191.70
Charles	8	376	3,770.00	87.85
Dorchester	2	25	550.00	.....
Frederick	19	921	2,993.00	308.89
Garrett	70	8,653	32,163.70	855.55
Harford	12	273	358.00	29.60
Howard	3	12	52.00	7.00
Montgomery	11	177	2,526.50	67.95
Prince George's	50	2,316	15,124.50	209.62
St. Mary's	2	135	2,981.00	34.50
Talbot	3	161	4,745.00	41.68
Washington	25	795	1,463.15	218.65
Wicomico	14	1,601	13,850.00	408.30
Worcester	8	664	3,506.00	104.50
Total	383	31,828	\$150,599.80	\$4,061.09

FALL, 1925

County	No. of Fires	Area Burned	Damage	Expense
Allegany	16	400	\$958.50	\$152.15
Anne Arundel	5	185	235.00	46.35
Baltimore	3	8	77.00	1.50
Cecil	5	43	17.00	25.40
Charles	2	3	15.00	7.70
Dorchester	1	950	3,100.00	54.20
Frederick	1	7	23.00	
Montgomery	8	81	680.50	63.00
Prince George's	6	183	444.00	39.60
St. Mary's	4	55	1,230.00	28.85
Washington	5	142	233.00	48.75
Wicomico	5	337	2,759.00	75.00
Worcester	1	1	177.00	15.50
Total	62	2,395	\$9,949.00	\$558.00

SPRING, 1926

County	No. of Fires	Area Burned	Damage	Expense
Allegany	81	14,128	\$52,730.50	\$2,497.97
Anne Arundel	51	7,512	108,655.50	619.55
Baltimore	12	617	8,246.00	77.35
Calvert	3	1,000		139.10
Carroll	7	92	298.00	62.90
Cecil	38	2,733	6,013.50	180.85
Charles	10	1,990	13,235.00	255.76
Dorchester	2	1,135	1,670.00	40.50
Frederick	34	8,250	18,705.00	1,466.90
Garrett	54	4,863	11,131.55	864.55
Harford	16	202	545.00	72.20
Howard	8	133	593.50	39.60
Kent	2	435		8.00
Montgomery	42	2,202	14,870.00	551.45
Prince George's	80	8,332	195,723.50	765.13
St. Mary's	11	648	11,290.00	159.50
Washington	34	2,468	8,557.50	1,187.20
Wicomico	14	1,246	8,814.10	191.75
Worcester	6	594	6,260.00	197.95
Total	505	58,580	\$468,588.65	\$9,378.21

SUMMARY OF FIRES BY SEASON

Year	No. of Fires	Area Burned	Damage	Expense
Fall, 1923	45	1,115	\$2,541.75	\$288.20
Spring, 1924	92	4,611	13,917.90	675.05
Fall, 1924	174	22,363	63,023.45	2,905.06
Spring, 1925	383	31,828	150,599.80	4,061.09
Fall, 1925	62	2,395	9,949.00	558.00
Spring, 1926	505	58,580	468,388.65	9,378.21
Total	1,261	120,892	\$708,420.55	\$17,865.61

State Forests—The State Forests are located in three groups and comprises about 4,100 acres. Most of these areas were acquired by gift and some by purchase. Besides the actual land owned by the State, there are certain areas which, under agreement are used as Auxiliary State Forests and abut State-owned land. The State-owned land and the Auxiliary land is as follows:

Garrett County

Skipnish	888	acres
Briar Ridge	931	"
Herrington Manor	912	"
Kindness	206	"
Cooperative	600	"

Washington County

Old Fort Frederick	189	"
--------------------------	-----	---

Howard and Baltimore Counties

Patapsco	1,000	"
Cooperative	1,500	"

These serve several important uses:

- 1—The demonstration of applied forestry in different sections.
- 2—As watershed protection of important rivers and streams.
- 3—As recreation grounds for the people of the State.

Most of the land acquired has been of the cut-over nature but under careful protection and management it has increased in value year by year.

During the period covered by this report the State has had some timber cut from the State lands. The trees were carefully marked before cutting and these areas will serve as an excellent demonstration of the proper method of handling woodlands.

From the recreational standpoint the State Forests have been most widely used. Some 533 permits for camping have been issued in the various areas during the last 2½ years.

Under these permits it is estimated that more than 5,000 people used the State forests for overnight camping. Besides this there have been daily excursionists. A Resident Warden is in charge of each one of the State forests.

One of the greatest needs of the State is the acquirement of more forest land. The State is at present dependent on outside supply of timber for more than four-fifths of the amount used, as under the existing methods of taxation, private individuals are not taking up the growing of trees and it, therefore, behooves the State to make provision for future timber supply.

Aside from the matter of timber supply, the recreational uses of the State Forests cannot be over emphasized as it is the desire of the

Department to ultimately acquire 200,000 acres of State Forests which would approximately be one-tenth of the timbered area. From the experience of other states this will be a good investment to the people of the State.

State Forest Nursery—The State Forest Nursery is situated at College Park on Maryland Experiment Station Ground. Forest planting and roadside tree stock are grown and distributed at cost throughout the State. The demand for these trees has been steadily growing and has exceeded the stock that the Department has been able to raise. During the past year an additional 10 acres was added to the Nursery and even with this addition it is doubtful whether or not the Department can raise enough trees to meet the demand, provided the demand increases in the proportion as it has.

During the last 2½ years, approximately 500,000 trees have been distributed.

Shade Tree Work—Under the Roadside Tree Law enacted in 1914, the care and protection of shade trees growing along the public highways throughout the State and the administration of the work was placed on the Department of Forestry. It is estimated that there are approximately two million trees within the right-of-way of the streets and highways of the State.

No trees growing within the right-of-way of any of the public thoroughfares can be cut or trimmed without a permit from this Department and whenever the Department deems it necessary a forest warden is assigned to supervise the work. This is primarily true in the case of trimming by the Pole Line Companies to give clearance to their wires. At present there are 48 forest wardens assigned to tree work. About a third of this number are continuously at this work, supervising; the remainder are called upon to supervise tree work anywhere from one month to six or seven months during the year. The cost of such supervision is borne entirely by the pole line companies, there being no State appropriation to carry on this work.

Besides supervision of trimming and the granting of permits, the Department gives assistance and advice to organizations and individuals in shade tree problems, preparing planting plans, recommendation for trimming, spraying and other work of this nature.

An innovation made during the last two years is that of requesting the pole line companies to have a forester go over the proposed new lines and relocation lines with engineers of the pole line companies so as to minimize the necessity for trimming the trees. The forester looking out for the trees and the engineer looking out for the engineering end of the lines. This is working out very well and is hoped that many trees can be spared by this method.

During the past two years the Department has supervised the trimming of 75,000 trees. Examined and prepared reports on shade

tree conditions in three towns and given advice of one kind or another to a large number of individuals.

Educational Work—As provided by the Reorganization Act, the State Forester is also Professor of Forestry at the University of Maryland and gives a course of lectures and field demonstrations in forestry during the spring term. During the last 2½ years, this course has been omitted because of lack of sufficient number of students to make it worth while.

Illustrated lectures and talks on forestry and trees are given by the members of the Forestry staff throughout the State. Lantern slides and moving pictures are used extensively in this work. During the past 2½ years approximately 343 lectures and talks have been given in various parts of the State before different organizations and groups.

By means of special articles for the local papers and contributions to magazines on forestry subjects, the Department is endeavoring to educate the people of the State along forestry lines.

Special displays have been prepared for the County Fairs and information furnished for the Maryland Exhibit at the Sesqui-Centennial.

A special series of photographs depicting different phases of forestry work, life in the woods and the characteristics of the important trees in Maryland have been prepared and are available for schools and institutions within the State. There are also exhibition material of wood species and tree seeds. Besides this the Department has on file over 1,500 photographs all mounted and catalogued, depicting different forestry scenes and activities within the State and Country.

The Department maintains a mailing list of one thousand selected names throughout the State and distributes bulletins and pamphlets as issued during the past 2½ years. Leaflet Fort Frederick State Forest, First and Second Edition of Loblolly Pine in Maryland and Forest Fire leaflet have been printed and sent out.

Forest Investigations—Outside of the administrative work, the Department of Forestry has been carrying on investigations as to the growth and yield of various timber species of the State, collecting and compiling information as to the cost of manufacture of various forest products and along with this a list of dealers in stumpage and mill operators. Besides this, the Department has been getting information regarding forest taxation with the passage of legislation favorable to forestry practice in mind.

Taper measurements are being made of different species for the construction of volume tables.

Permanent sample plots have been laid out for the study of tree growth and are being measured at intervals.

Since the passage of the Railroad Safety Strip Law, requiring railroads to clear a 100-foot strip free from inflammable material, sample plots have been established in the burned sections next to the railroad and check plots laid out in adjacent unburned areas to secure data on fire damage. These are examined annually and remeasured every five years.

The bulletin on Loblolly Pine in Maryland, consists of 96 pages and is the direct result of one of the investigations carried on by this Department. Leaflets and bulletins such as the "Loblolly Pine" are published as the results justify.

Extension Work—Under the Clark-McNary Act, funds to maintain an Extension Forester were made available by the Federal Government. The Extension Forester in Maryland is a member of the Department staff and is located at College Park. There is close cooperation between the Forestry Department and the Extension Service in that the State Forester is responsible for the policy and subject matter which the Extension Forester carries out, but the work itself is conducted under the administrative control of the Director of Extension. Extension Forestry consists of giving advice to woodland owners in their various forest problems such as woodland management, planting, and teaching through demonstrations and lectures. The work is largely carried on with the help of the various County Agents.

FINANCIAL STATEMENT

1924

Balance, October 1, 1923..... \$ 23.37

Receipts (October 1, 1923, to September 30, 1924):

State Treasurer.....	\$31,358.35
Woodlot Work (travel).....	347.10
Reimbursement—Fire Expenses	621.06
Other Sources	480.17

\$32,806.68

Interest, F. & M. Nat'l Bank.....	34.12
-----------------------------------	-------

32,840.80

Expenditures (October 1, 1923, to September 30, 1924):

Salaries and Wages.....	\$21,771.06
Rent	1,200.00
Postage	400.00
Office Supplies and Stationery.....	529.51
Printing	876.15
Office Expenses.....	150.00
Telegraph and Telephone.....	398.38
Office Equipment	300.00
Traveling Expenses	2,132.55
Freight and Express.....	75.00
Seeds and Trees.....	754.00
Maintenance of Two Autos.....	1,652.03
Field Equipment	1,547.39
Receipts to Treasurer	1,721.52

33,507.59

Deficit, September 30, 1924	\$ 643.42
-----------------------------------	-----------

(This deficit is covered by funds to the credit of the Forestry Department held by the State Treasurer.)

FINANCIAL STATEMENT

1925

Balance, October 1, 1924.....	\$	643.42
Receipts (October 1, 1924, to September 30, 1925):		
State Treasurer	\$38,917.64	
Woodlot Work (travel).....	158.67	
Reimbursement—Fire Expenses	1,388.25	
Other Sources	47.16	
	<hr/>	
	\$40,509.72	
Interest, F. & M. Nat'l Bank	58.49	
	<hr/>	
		40,568.21
Expenditures (October 1, 1924, to September 30, 1925):		
Salaries and Wages.....	\$25,645.51	
Repairs to Buildings, Garrett Forest.....	100.00	
Repairs to Buildings, Patapsco Forest.....	200.00	
Repairs to Motor Vehicles.....	200.00	
Traveling	2,501.55	
Freight and Express.....	110.00	
Postage	807.26	
Office Supplies.....	672.90	
Printing	760.92	
Seeds and Trees.....	782.90	
Motor Supplies.....	125.00	
Office Equipment	65.34	
Field Equipment	740.21	
Rent	1,200.00	
Maintenance of Automobiles.....	1,300.00	
Receipts to Treasurer.....	1,973.23	
	<hr/>	
		37,184.82
Excess Receipts over Disbursements.....	\$	3,383.39
Deficit, September 30, 1924.....		643.42
	<hr/>	
Balance, September 30, 1925.....	\$	2,739.97
Obligations contracted for to cover this amount.		

FINANCIAL STATEMENT

October 1, 1925, to July 1, 1926

Balance October 1, 1925..... \$ 2,739.97

Receipts (October 1, 1925, to July 1, 1926):

State Treasurer.....	\$29,425.70
Woodlot Work (travel).....	24.40
Reimbursement—Fire Expense.....	519.33
Other Sources.....	39.57

\$30,009.00

Interest F. & M. Nat'l Bank.....	53.44
----------------------------------	-------

30,062.44

\$32,802.41

Expenditures (October 1, 1925, to July 1, 1926):

Salaries and Wages.....	\$22,089.12
Repairs to Buildings.....	80.52
Repairs, Motor Vehicles.....	295.94
Travel.....	2,756.85
Freight and Express.....	67.56
Postage.....	911.40
Office Supplies.....	499.77
Printing.....	788.40
Seeds and Trees.....	918.10
Supplies—Motor Vehicles.....	499.50
Office Equipment.....	158.46
Field Equipment.....	1,431.43
Rent.....	1,200.00
Maintenance of Autos.....	1,000.00
Receipts to Treasurer.....	647.29

\$33,344.34

Deficit July 1, 1926.....	541.93
---------------------------	--------

This deficit is covered by funds to the credit of the State Department of Forestry, held by the State Treasurer.

Respectfully submitted,

FRED K. BESLEY,

State Forester.

STATE DEPARTMENT OF FORESTRY

Inventory—September 30, 1926

	Land	Buildings	Field Equipment	Nursery Stock	Office Equipment	Totals
Baltimore City.....	\$41,735.00	\$9,395.94	\$4,435.35*		\$5,706.75	\$10,142.10
Garrett County.....	1.00†	1,075.00				51,130.94
Allegany County.....	9,450.00	3,500.00				1,076.00
Washington County.....	10.00	600.00				12,950.00
Frederick County.....		4,500.00				610.00
Howard County.....	56,180.00					4,500.00
Baltimore County.....						56,180.00
Prince George's County.....	2.00†	1,500.00		\$7,887.30		9,389.30
Anne Arundel County.....	1.00†	900.00				910.00
Cecil County.....		700.00				700.00
Totals.....	\$107,379.00	\$22,170.94	\$4,435.35	\$7,887.30	\$5,706.75	\$147,579.34

* About half of this item consists of Fire-Fighting Tools in use by Forest Wardens in every county of the State.

† Land on which Fire Observation Towers are built.

The Library, College Park

To the President of the University:

During the past three years the Library has striven to do its part in the educational system of the University as far as is possible with the present conditions.

A growing University makes increased demands on its Library, for books and other material in print, for space and suitable surroundings for reading and study, and for services of many kinds. With modern educational methods calling for wide reading, the small libraries once considered adequate will no longer serve. More space we have been unable to give but some increase in budget allowance has enabled us to make the following improvements, the need for which was set forth in my last biennial report.

IMPROVEMENTS

The lighting of the General Reading Room has been greatly improved, some book cases have been added on both floors, and the main collections of books have been separated from the reading spaces by barriers which serve as delivery desks and cases for periodicals. This eliminates most of the former loss of books.

An attendant is in charge of the desk in the general reading room from 8:15 in the morning until 10:00 at night, except the time from Saturday noon to Sunday at 2:30. Books reserved by instructors for the use of their classes are now handled at this desk and this change from the old method of open shelves, made possible by an increased student assistance fund, has been a great satisfaction to faculty, students, and library staff, in that the books are not misplaced or gone when most needed. As soon as this change was made the books were equipped with pockets and cards and a better charging system was put into effect.

ADDITIONS

Last September a new member was added to the staff to act as Cataloguer and assistant in the teaching of Library Science. An idea of the volume of her work in cataloging during the year is given by the 4,819 volumes catalogued and about 7,000 new cards typed and filed in the catalogue. Corresponding figures for the entire triennium are 6,848 volumes and 12,978 cards. The number of freshmen taught in the Library Science course in 1925-1926 was 167, an increase of 62 since 1922-23, and 24 since 1924-1925.

A general assistant giving three-fourths time has been appointed for next year. His work will be partly secretarial.

Special efforts were made during the last two years to strengthen the collection of books in English literature, for which there was great need, and to bind the periodicals, especially those pertaining to agriculture, which had accumulated during previous years when funds were not sufficient to bind them. In both cases good beginnings have been made which need to be continued.

In 1925 the Library was made a depository for government documents with the privilege of selection of all or any of the great number of documents which the government prints for distribution.

A set of the German National Literature in 222 volumes and a 20-volume set of the German Classics were presented by a gentleman of Washington, D. C.

The graduating class of 1925 gave its bank balance, which was used in the purchase of a 12-volume set of the Century Dictionary and Encyclopedia.

By members of the faculty, students and other persons, 305 additional books were given.

The Mount Vernon College Library was purchased by the University and about 428 volumes from this collection on Sociology, History, Business, Economics, Philosophy, and General Literature were added to our Library, the others remaining in Baltimore.

Mr. Clarence R. Claghorn of Baltimore has loaned his valuable collection of mining literature to the Library.

102 volumes have been received by inter-library loans from the Library of Congress, the United States Department of Agriculture Library and a few other libraries. This leaves out of consideration loans obtained directly by members of the faculty and students.

106 volumes have been loaned from our library to individuals in the State.

IMMEDIATE NEEDS

Building

Our library building is very inadequate as to size and convenience of arrangement. The first floor, now occupied by the collection of Experiment Station and agricultural material was built and used for a gymnasium. The second floor, which houses the general reading and book stack room and the office of Librarian and staff, is reached by a steep staircase, inconvenient to many. We have approximately 18,500 books, about 17,000 of which are in the main library building, the rest being shelved in small collections in offices. We have nearly reached our limit of book capacity, whereas we need room for the 60,000 or more volumes usually expected in the Library of a University of the size and character of our University, and, of course, allowance for constant growth.

The following figures, taken from Statistics of State Universities and State Colleges for the year ending June 30, 1924, published in Bulletin 1925, No. 12, of the Bureau of Education, show the size of the book collections of Universities with less than 2,000 enrollment, and indicate how far below the average our library stands.

University	No. of Students	Bound Volumes In Library
Arizona	1578	55,000
Arkansas	1704	48,000
Delaware	606	30,000
Florida	1346	30,470
Georgia	1583	38,330
Idaho	1584	85,000
Louisiana	550	56,488
Maine	1290	65,526
*Maryland (College Park only).....	1011	18,000
Mississippi	850	40,000
Montana	1424	66,000
Nevada	855	39,900
New Hampshire	1188	50,000
New Mexico	511	36,000
North Dakota	1448	81,000
South Carolina	909	80,000
South Dakota	990	50,000
Vermont	1160	113,803
Virginia	1884	130,000
Wyoming	963	56,009

* The figures for Maryland are as of January 28, 1926.

Besides space for books there is urgent need of space for readers, as we can accommodate only 86 and we need room for about double that number.

The Librarian, the cataloguer, and the typist are crowded into a room 20 by 8 feet, which is so close to the reading room that readers are disturbed by the necessary conversation in the office.

The conversation at the delivery desk between borrowers and attendants is also disturbing to those studying and reading in the Reading Room, and this situation is entirely unavoidable in our present building.

We have no basement and no room that can be used exclusively for a storage room, for an unpacking room when boxes of books arrive, or for a work room where material is prepared for binding and other mechanical work done. This results in a disorderly appearance and disturbing noise in the reading room on the first floor.

There are no toilet rooms in the building.

Staff

The Loan Department of a library delivers to the reader the books he may desire to use within or without the building, keeps records of all loans, sends out overdue notices, collects fines and has charge of

the shelving of books and taking of inventories. The Reference Department gives assistance to those who need it in advising where information may be found, and showing the use of catalogues and indexes, and other helpful ways.

Our Loan Desk is managed by one student at a time, sometimes as many as six changes during the day being necessary. No member of the staff can be present evenings as they are needed all day, and one student is left with all the duties to perform and with the responsibility for order, which it is naturally hard for one student to assume with other students. Some students are better qualified than others for simple sorts of reference work but none have the training or time for the more difficult. As the next step towards relieving this situation I recommend the supplanting of student help in charge at the desk by regularly qualified members of the staff, who can do more of the needed reference work and keep better order in the General Reading Room. This could be done by a head of the Loan Department and a general Library Assistant giving part time at the loan desk and part time at other work.

With the additional assistance another improvement in methods might be made: The Library acting as a deputy for the Purchasing Department, could write book orders for all departments on the campus as it now does for books bought on its own funds. This is successfully done in some other institutions, resulting in better consideration of the sources of purchase, less duplication of labor and purchases, and time saved in getting the department books through the Cataloging Department of the Library.

Books and Periodicals

The increasing use of books and magazines can be shown in part by the figures below which are for those charged at the loan desk, but no estimate can be made of the use of reference books and periodicals read in the library and not taken away.

	Books	Magazines	Reserved Books
1923-24—For Home Use	3658	266	.....
Summer School, 6 wks., 1924.....	600	36	4726
1924-25	3034	212	3773
Summer School, 1925	450	30	4743
1925-26	4629	171	6317

Every year brings greater demands for literature related to the courses offered, which we are not able to meet because of our limited funds.

The average library budget is about 6 per cent of the total college budget. Ours is not a third so much. It is considered by the Committee on Library Revenues of the American Library Association that \$6.00 per full-time student should be the minimum annual expendi-

ture for books and periodicals in an institution where some research work is done. This sum would suffice only where there is a collection of normal size to begin with and additional book expenditure for each new department added to the University. A university with a relatively small number of students and doing work of the first grade will require a larger per capita amount for books. Since our library needs much increase to bring it to the average size and value, many expensive reference works and sets of periodicals being incomplete or altogether lacking, we need to spend considerably more than a minimum each year. Against the natural desire to acquire immediately the needed books to bring our library to a satisfactory condition must be placed the fact of our very limited quarters. To obviate this limitation in some degree the least used of the old books might be stored until a new library is available so as to allow for improvement in the near future. In view of the circumstances a feasible recommendation for the next biennium would be an increase in the Library budget to the moderate amount stated in the summary of needs at the end of this report. Following are some statistics which will bear out the claim of conservatism in the estimate. The smaller institutions mentioned in the report are selected.

STATISTICS OF 1925-26, UNIVERSITY AND COLLEGE LIBRARIES, COMPILED
BY THE AMERICAN LIBRARY ASSOCIATION, COMMITTEE ON SALARIES,
INSURANCE AND ANNUITIES, AND PUBLISHED IN THE
A. L. BUDDETIN OF JANUARY, 1926.

Library	No. Students	Budget	Salaries
U. of N. Carolina.....	2,282	63,725	29,758
U. of N. Dakota.....	1,635	17,975	9,800*
U. of Oregon.....	2,983	67,940	39,040
Amherst	696	28,497	16,260*
Bowdoin	533	19,438	9,580*
Bryn Mawr.....	508	23,156	13,400*
Dartmouth	2,142	70,340	31,975
Rochester	2,153	84,120	32,250

* Exclusive of student assistance.

Summary of Needs

A new Library building to meet immediate needs and to allow for 50 years' growth; about 24,000 square feet, and equipment.

Two additional members of the staff: (1) Head of Loan Desk; (2) General Assistant.

An annual equipment budget (exclusive of salaries) of \$12,700, to allow especially for more books, periodicals, and binding.

Respectfully submitted,

GRACE BARNES,
Librarian.

THE LIBRARY, BALTIMORE

To the President of the University:

I beg to submit herewith a report of the work of the Library of the University of Maryland, Baltimore, for the triennial period October 1, 1923, to September 30, 1926.

During the University year the Library staff consists of the Librarian and two (2) part-time assistants. Hours: 9 A. M. to 10 P. M. daily, except Saturdays, 9 A. M. to 5 P. M.

Founded in 1807, the University of Maryland was the first medical school in this country to establish a Library (1813). As various departments were added to the University they in turn developed their own special libraries and the Library stands as a consolidated one, representing: Medicine, Law, Dentistry, and Pharmacy. Every department of the University is actively engaged in the upbuilding of the Library, and a great deal of reference work is done for teachers and students; bibliographies, prepared and verified, etc. It is a reference Library to a large extent, with discretionary power to lend certain books vested in the Librarian.

The average daily attendance (all departments) is 375, ranging from groups of twenty-five students, to the full seating capacity of the reading and conference rooms which is one hundred. Approximately one hundred texts and journals are circulated by charging slips during the library day. Under present conditions the circulation of books from the open shelves which contain journals, reports, digests, etc., could not be kept, but it would run into the hundreds daily.

In addition to the very valuable library which includes many of the early works in medicine, law, dentistry and pharmacy, our building contains items of historical value, bound theses of the School of Medicine (1820-1886), autograph letters of celebrated persons, portraits and busts of the early faculties, ancient admission tickets to lectures, portraits and records of the Gold Star Men and Women in the World War, the Major German H. H. Emory Memorial Tablet, the magnificent General la Fayette Memorial Flag. From the standpoint of replacement, these treasures are priceless.

The catalogue of the Law Library has been completed with Library of Congress printed cards. The revision of the catalogue of the Scientific Library (Medicine and the allied sciences), from old manuscript cards to the modern method is being carried forward as rapidly as our small staff will permit. Extra help for this work is very much needed. The writings of the alumni, reprints, etc., are collected and systematically arranged. We also take charge of the "over" copies of our various university publications, in which a great deal of work is done every year by sale and exchange. The Library assists in the work of the Practice Court, School of Law, by receiving and serving legal papers. Adult education, too, is helped by the distribution of

magazines and newspapers to the free wards of the University Hospital.

We are endeavoring to create a University Library by building up from the historical works, and embracing the modern. With the steady increase in reference work which is required in each Department of the University we find serious deficiencies in our literature. I would like to call special attention to our need for modern texts and journals.

During the past two years the accessions, attendance and work of the Library have grown very much, and our need for expansion is great. The attention of the Librarian has been called to the fact that valuable gifts and bequests from members of the alumni of the University are being diverted elsewhere because our building offers poor protection against fire and theft. What is needed by every Department of the University of Maryland in Baltimore is a modern fire-proof structure with proper equipment, room for growth, and a sufficiently large library staff to carry on the work more satisfactorily.

Respectfully submitted,

RUTH LEE BRISCOE,

*Librarian of the University,
Baltimore.*

The Maryland State Board of Agriculture

Live Stock Sanitary Service

To the Executive Officer,

Maryland State Board of Agriculture.

Sir:

The following is a report of the work of the Live Stock Sanitary Service of the State Board of Agriculture from October 1st, 1923, to September 30th, 1926.

During this period there have been comparatively few outbreaks of infectious or contagious diseases among domestic animals.

The cooperation of the local veterinary practitioners in making examinations and reports and the investigations made by State and Federal inspectors while engaged in Tuberculosis and Hog Cholera Eradication work relieved our limited force to a great extent and seemingly has taken care of the situation.

ANTHRAX

Anthrax has been found on five farms in Maryland during the period covered by this report, few animals being affected and the outbreaks promptly checked.

BLACKLEG

Blackleg outbreaks reported numbered twenty-two. These cases have occurred in several sections of the State and have been handled in most instances by local veterinarians by vaccination.

RABIES

Cases of Rabies have occurred with about the same frequency as in past years, but have been held in check. Reports are made to this office of the examinations of dogs by local practitioners, the College Park office, the State and City Health Departments, and the Federal

Bureau of Animal Industry. The number of cases and the results of examinations being as follows:

	Total	Positive	Negative
Dogs examined physically by inspectors from the Board of Agriculture, Baltimore office ...	448	12	436
<i>Post mortem</i> reports on dogs examined by the State Health Department, the Baltimore City Health Department and the Federal Bureau of Animal Industry ...	375	337	38
<i>Post mortem</i> reports received at the Baltimore office, on dogs examined at the College Park office	83	48	35
Dogs examined by local veterinarians	53	29	24

The small number of positive cases found by State inspectors from the Baltimore office is accounted for by the fact that dogs reported to have bitten persons are examined that the results of such examinations may be sent to the State Health Department. In only a very few instances have such dogs been found to be rabid.

JOHNE'S DISEASE

This disease in cattle is known to exist in a number of herds and where found upon test the affected cattle have been removed and slaughtered. The extent of the disease is not known, however, and investigations should be conducted along this line when circumstances will permit. The expenses incurred in Tuberculosis Eradication and the limited force at our command, has prevented the taking up of this project except in a small way.

SCABIES

In four lots of sheep scabies was found and some of the animals slaughtered, others being dipped and the premises thoroughly cleaned and disinfected. At this time no cases are known to exist in the State.

CONTAGIOUS ABORTION

Many cattle in Maryland herds as in dairy herds in other States have contagious abortion. Circumstances will not permit here, as elsewhere, a very extensive campaign for the control or eradication of this disease.

BOVINE TUBERCULOSIS ERADICATION

October 1, 1923, we had under State and Federal supervision 5,031 herds, or 49,234 cattle.

October 1, 1926, we had under supervision 15,148 herds, or 110,390 cattle.

The total number of accredited herds has been increased during this period from 684 herds with 12,344 cattle to 2,517 herds with 34,296 cattle.

In previous years this work was conducted on the accredited herd plan meaning the testing of only those herds whose owners wished to place their cattle under supervision. A State law passed in 1924 authorizing the testing of all cattle and a Baltimore City ordinance requiring the tuberculin testing of cattle whose owners ship milk to the Baltimore market, enabled this department to conduct area work.

The first area tested was Baltimore County in 1925, where an infection amounting to about twenty-six per cent was found. The first annual retest conducted in 1926 showed a reduction in infection to between four and five per cent.

Two other counties are now being tested under the same plan, Carroll and Harford, both counties showing about the same degree of infection on original tests and retests as Baltimore County.

Information as to the number of cattle in the State as given by the last Federal and State census as compared with the actual count in the Baltimore County area would indicate we have about one-fourth more dairy cattle in the State than is given by the census referred to.

There is in the State probably about 256,000 dairy cattle. With 110,390 now under supervision and much of what we judge to be the highly infected areas once tested, we feel we have reached the peak in this work and that with adequate appropriations for indemnities and operating expenses, rapid progress can be made.

The following statements should be of interest:

Fiscal Year Ending	Cattle Tested	Reactors	State Indemnity	Average Salvage	Average State Indemnity
9/30/24	64,867	4,505	\$94,617.17	\$15.83	\$20.99
9/30/25	103,234	9,303	178,990.74	18.08	19.24
9/30/26	91,888	7,061	134,233.18	18.94	18.99

The above statement shows the number of cattle tested during the periods specified and includes both original and retests.

The system used in the marketing of reacting animals in Maryland, which has been in operation several years, has enabled us to secure prices comparing favorably with those obtained in other States. The following is taken from a Federal report for the month of June, 1926, during which month the largest number of tubercular cattle were marketed. The States mentioned below are the six States which obtained the largest amounts as salvage.

State	Average Appraisalment	Average Salvage	Average State Indemnity	Average Federal Indemnity
Connecticut	\$76.24	\$33.70	\$28.44	\$14.10
Maryland	75.64	33.58	14.32	14.32
Michigan	100.33	33.65	37.68	19.27
Minnesota	76.99	35.53	25.98	13.59
Nebraska	83.86	33.28	13.12	13.12
Wisconsin	118.93	33.83	17.71	17.71

Taking into consideration the fact that Maryland cattle do not compare in size with those in the other States listed, the high average salvage and low average indemnity show a comparatively small cost to the State in conducting this work.

At the State testing station at the Union Stock Yards where all dairy or breeding cattle are tuberculin tested before they can be removed from the yards, the records show:

Fiscal Year	Number Tested	Number Passed	Number Reacted
1923-1924.....	1681	1640	41
1924-1925.....	1721	1635	86
1925-1926.....	2345	2265	80

Cattle not under State and Federal supervision tuberculin tested by local veterinarians:

Fiscal Year	Number Tested	Number Passed	Number Reacted	Number Suspicious
1923-1924.....	5665	5512	145	8
1924-1925.....	6148	5918	215	15
1925-1926.....	7888	7651	225	12

HOG CHOLERA WORK

This work is carried on as a cooperative measure by the State Board of Agriculture, the Extension Service of the University of Maryland and the Bureau of Animal Industry of the United States Department of Agriculture, and is conducted under what is known as the Maryland Plan.

The following is taken from a report covering the period from October 1, 1923, submitted by Doctor I. K. Atherton, Inspector in Charge of Hog Cholera Work and Farm Sanitation. Doctor Atherton says, "The Maryland Plan is founded on the principle of preventing, through sanitary measures, the introduction, harboring and spread of infection. There is nothing in its provision that entails any expense on the part of swine raisers to carry out, neither does it deny them the privilege of employing any additional method of protecting their swine from Cholera, providing it is not used contrary to the State Live Stock Sanitary Laws. So far, the observance of the rules and regulations of the State Board of Agriculture covering the disease, with the possible exception of the control of the double treatment, has been entirely voluntary on the part of the farmers and stock raisers. It is believed this makes the results obtained all the more remarkable and is good evidence that the farmers as a whole are giving their unqualified approval and whole hearted support to the work."

OUTBREAKS BY MONTHS

	1923-1924	1924-1925	1925-1926
October.....	150	75	56
November.....	110	62	21
December.....	51	24	22
January.....	26	19	23
February.....	30	20	16
March.....	32	18	5
April.....	33	22	5
May.....	23	14	7
June.....	25	11	11
July.....	52	10	4
August.....	76	53	14
September.....	102	55	56
Total	710	383	240

"It is believed remarkable that 53% of the cases occurred from October 1, 1923, to September 30, 1924. This large increase during the period was undoubtedly a sequence of the widespread outbreaks of the disease in the Corn Belt during the summer and fall of 1923, and evidence that much infected pork reached the channel of interstate trade from that territory. It is undoubtedly more than a coincidence that there was a heavy increase in the outbreaks when the consumption of pork was increased in the fall of 1923, and that this continued down through the smoked meat season of 1924."

"Of the 1,333 outbreaks it was found that 697, or 52 per cent of them, were of the 'backyard type,' that is, a few hogs kept in small pens and fed largely on concentrates and swill from the house. Therefore, only 636, or 48 per cent, occurred on farms where hogs are bred and raised. This would indicate that for any one year the infection occurred on less than one-half of one per cent of the farms in the State."

"At least two articles each month are prepared for distribution to county agents, farmers organizations, newspapers and others who might be interested. The first of these is a summary of cholera that occurred the previous month. Incidents connected with the outbreaks that might be of special interest are featured in these reports. The second article of the month is intended to convey information relative to the introduction, harboring and spread of the infection."

An interesting feature of Doctor Atherton's report is this statement "—The drop in losses for two six-year periods were, according to data compiled by the U. S. Department of Agriculture, 18 more per thousand in Maryland than the surrounding states of Pennsylvania, Delaware, and the Virginias."

This meant in Maryland an annual saving of 6,480 additional hogs, or an average of \$93,376.00 per annum. However, as also indicated in the report referred to, this data is based on the assumption that

an arbitrary percentage of all losses among swine were due to cholera.

The data collected by this office shows a much smaller number of swine to have been lost from cholera than estimated above. In fact, this data showed the drop in losses to have been 22 more per thousand than estimated by the U. S. Department of Agriculture. This is an additional annual saving of \$14,187.20.

In speaking of the causes for new outbreaks of the disease, Doctor Atherton makes this statement: "With the information thus collected it has been possible to determine the three factors that are largely if not entirely responsible for starting new outbreaks and thus the key to the situation has been obtained. The data collected during the period covered by this report confirms the conviction formed from previous experience, that if the history regarding the source of infection in a new or primary outbreak can be obtained, it will be found that one of the following factors was responsible for it, viz., infected pork, infected hogs, or abuse of the double treatment. It is believed that if nothing but the determination of the sources of infection of primary outbreaks had been accomplished since the work was inaugurated in Maryland it would have made it all worth while."

EUROPEAN FOWL PEST

Early in December, 1924, this disease was found in New York, New Jersey, Connecticut, Rhode Island, and parts of Pennsylvania, supposed to have originated in shipments of poultry from the Middle Western States.

Upon the recommendation of the Maryland State Board of Agriculture, the Governor placed a quarantine December 12, 1924, prohibiting the shipment of live poultry into Maryland from States where the disease was known to exist. As the outbreak spread to other States another quarantine was placed stopping all shipments of live poultry into Maryland. The Live Stock Sanitary Service, the Federal Bureau of Animal Industry, the State Health Department and the Baltimore City Health Department by working together were able to keep the disease from entering this State and not a single case was found in Maryland.

The following is a report prepared by Doctor E. M. Pickens, Pathologist and Bacteriologist in charge, covering the work of the Live Stock Sanitary Laboratory located at College Park:

"The past three years has been a period of expansion and growth in the work of this Laboratory. The demand for the services of the Staff in the field as well as in the Laboratory, has increased until it has become physically impossible to render much needed assistance to the citizens of the State in many cases. The work has been further cramped by the fact that the laboratory allotted to this work has been forced to continue giving way to the need for teaching room until we have at the present time no proper available space for use in the

diagnosis of infectious diseases of animals. The same condition obtains in regard to laboratory space for research work.

Laboratory Work:

"The assistance rendered to the people of the State consists of laboratory diagnosis of infectious diseases of animals; milk analyses; chemical analyses; field trips and research work.

"Our records show that the following cases have been handled, under the above named handicap, during the period from October 1, 1923, to September 30, 1926.

Water analyses	1,075
Poultry, examined for disease.....	500
Autogenous bacterins prepared.....	12,525 c.c.
Hog cholera, laboratory examinations.....	46
Oysters	4
Milk analyses	1,019
Mastitis cases examined on farms.....	117
Rabies examinations	182
Field trips, miles traveled.....	36,828
Chemical analyses	54
Examinations for parasites.....	430
Abortion, blood tests and field examinations.....	4,144
Anthrax	43
Tuberculosis and tuberculin tests	1,636
Sheep diseases	1,480
Botulism	22
Blackleg	17
Johne's Disease.....	115
Physical examinations of animals.....	67
Miscellaneous diseases examined for.....	631

Publications:

"Unfortunately, our routine work has increased to such an extent that it has become necessary to restrict our research practically to the ozone work, and that carried on by the graduate students. As it has been impossible to add to our Staff to keep pace with the increase of the students and laboratory work, we have had no alternative in the matter. This, of course, precludes the possibility of publications. We have succeeded, however, in completing and publishing an article entitled *Pyocyanus Bacillosis and Mastitis Due to Pseudomonas Aeruginosa*. The work has been completed and data compiled for several other articles. These will be published as soon as time is available to prepare the manuscripts. Several test-book reviews have also been written and published.

Needs of the Laboratory:

"Another undesirable factor often encountered in our present quarters, arises when specimens of animal tissue are received at the Laboratory in advanced stages of decomposition. The odors emanating from these specimens are often very disagreeable. At times these

odors permeate not only the third floor of the Agricultural Building, but also become objectionable to the ladies in the Cooking Laboratories on the second floor of this building. Should such a specimen, for example, be the head of a dog suspected of rabies, which had bitten one or more persons, the laboratory examination would have to be completed even though the odor was most unpleasant throughout the building.

"From the above facts, it may be seen that the Live Stock Sanitary Laboratory, especially, should be housed in a building which is separated from the administration offices, and from certain other types of laboratories. The diagnosis laboratory should also be located on the first floor of such a building, as there is a great deal of heavy material passing to and from it. Adequate laboratory space would thus be made available for research work."

The report made by Doctor Pickens shows that during the past three years good work has been done regardless of the fact that the present quarters occupied by this department are inadequate for its needs. It will also be noted that a number of examinations of animals on farms has been made by veterinarians connected with the laboratory service. In this way they come in direct contact with the local veterinarians in private practice in the State and can be of assistance to them as well as to the cattle owners.

The county agents connected with the Extension Service, the workers in the Dairy Husbandry Department, and other branches of the University of Maryland have by their active cooperation enabled this department to show what we consider real progress in the control and eradication of animal diseases.

Respectfully submitted,

JAMES B. GEORGE,
Director.

FINANCIAL STATEMENT
MARYLAND STATE BOARD OF AGRICULTURE
LIVE STOCK SANITARY SERVICE
STATEMENT OF RECEIPTS AND EXPENDITURES
FOR TRIENNIUM ENDING SEPTEMBER 30, 1926

	1923-1924
Salaries and Wages.....	\$36,965.00
Rent	3,713.24
Postage	120.00
Office Supplies.....	560.38
Expenses Hog Cholera Eradication.....	2,612.87
Telephone and Telegraph	272.51
Miscellaneous	665.88
Expenses Field Work.....	5,213.56
Freight and Express.....	
Medical and Laboratory Supplies	1,938.51
Tuberculosis Eradication Indemnity Fund	88,687.89

Total Expenditures.....	\$140,749.84
Unexpended balance in hands of Comptroller.....	.16

Appropriation	\$140,750.00
---------------------	--------------

	1924-1925	1925-1926
Salaries and Wages.....	\$44,041.82	\$46,681.00
Traveling	9,741.32	10,120.77
Transportation	4.66	27.94
Communication	488.52	739.27
Office Supplies and Stationery.....	358.57	396.47
Printing	484.70	182.15
Medical and Surgical Supplies.....	1,353.20	859.09
Laboratory Supplies.....	44.63	24.38
Other Supplies.....	3,207.66	1,046.03
Office Equipment	899.01	650.38
Other Equipment	510.09	165.88
Rent	3,848.64	3,848.64
Tuberculosis Eradication Indemnity.....	131,207.11	131,447.88

Total Expenditures.....	\$196,189.93	\$196,189.88
Unexpended balance in hands of Comptroller...	.07	.12

Appropriation	\$196,190.00	\$196,190.00
---------------------	--------------	--------------

INVENTORIES, BALTIMORE

September 30, 1926.

SUMMARY

Office Equipment	\$4,834.11
Other Equipment.....	971.90
Total.....	\$5,806.01

SUMMARY

Consumable supplies on hand:	
Office Supplies.....	\$278.30
Other Supplies.....	1,299.70

Total.....\$1,574.24

The figures represent actual cost of articles purchased from June 30, 1916, to September 30, 1926.

INVENTORIES, COLLEGE PARK

September 30, 1926.

SUMMARY

*Office Equipment	\$560.18
*Other Equipment	7,434.17
Total	<u>\$7,994.35</u>

SUMMARY

Consumable supplies on hand as given on Dr. Pickens' report:

Office Supplies	\$278.30
Other Supplies	470.90
Total	<u>\$749.20</u>

* The figures represent actual cost of articles purchased from June 30, 1916, to September 30, 1926.

The Military Department

To the President of the University:

This report covers the operations of the Military Department.

AUTHORIZATION

The Reserve Officers' Training Corps at this University, is an Infantry Unit of the Senior Division and was established under an act of Congress of June 3, 1916, as amended. This act is known as the National Defense Act.

OBJECT

The primary object of the Reserve Officers' Training Corps is to provide systematic military training at civilian institutions for the purpose of qualifying selected students of such institutions as Reserve Officers in the military forces of the United States. As such it constitutes a phase of our National Defense in case of a major emergency. This is the announced purpose as expressed by the War Department.

In addition to the primary purpose as expressed by the War Department, other important functions of this department are the development of citizenship, discipline, leadership, analytic thinking, decisiveness, and finally, physical development. All of these characteristics contribute materially to the correct development of the student while he is in college, and further, they are of value in fitting him for any phase of civilian profession or occupation that he might engage in.

In the course of the theoretical and practical instruction the development of leadership, is stressed and this might correctly and truly be designated as *the* function of this department.

In the course of our work careful attention has been given to the physical condition of students. Prior to the matriculation of a student in the R. O. T. C. he is given a thorough and complete physical examination to determine his condition and fitness for the work incidental to his course of instruction. This examination has been ably performed by the school department of health which has cooperated with the Military Department.

ORGANIZATION

The personnel on duty during the present two years, as allotted by the War Department, was three officers, one warrant officer, and one sergeant, making a total of five on duty. This is a reduction of one officer since the last biennial report of October 1st, 1923. In Septem-

ber, 1924, one captain was relieved from duty and no replacement made.

Due to the large number of students taking military instruction it is believed that at least one more officer should be detailed so as to make the total number of officers four.

The personnel in the main is charged with the instruction work; however, necessary administrative duties require practically the entire time of one member of the department.

The practical outdoor work, or drill, of the student members of the unit is conducted by the cadet officers under the supervision of the instructor personnel, the purpose of this being to develop leadership among the seniors in school.

FINANCE

The annual financial budget given to this department is vitally necessary for the proper operation and support of its affairs. The budget allowance when wise economics are practiced is sufficient; therefore no further increase in the budget is recommended at this time.

RESUME OF WORK

The following tables serve to show what has been accomplished with reference to training and instruction during the period that this report covers:

(a) Average number of students annually enrolled:	
School year of 1923-24	389
School year of 1924-25	421
School year of 1925-26	421

(b) Number of graduates commissioned in the Officers' Reserve Corps:

June, 1924	9
June, 1925	23
June, 1926	25

(c) Number of graduates commissioned into the Regular Army or United States Marine Corps:

1924	1
1925	2
1926	1

Referring to the number of students enrolled in the military instruction as shown in table subparagraph (a) above, it will be noted that there was no increase in 1926 over 1925. This was due to a limitation made by the War Department upon the number of students who might take military instruction and is based upon lack of necessary funds to properly equip and outfit students. This condition prevented a number of students who desired and asked to take military instruction from taking the work.

Referring to tables (a) and (b) above, it appears that the finished product shown in table (b) to be out of proportion to the number of

students enrolled as shown in table (a). The reason for the apparently small number of students being commissioned is due to the fact that in the last two years of the military course, only those students who manifested a large amount of interest in the military training and who exhibited adaptability for officers, are accepted for training. Also a large number of students who take only two years of academic college training prior to professional school, such as medical and law, are not available for enrollment in the latter two years of the course.

This should not be construed as being a detriment either to this department or to the students, since during the first two years of the students' enrollment in military training are the years in which stress is laid upon development of those characteristics referred to and outlined under the heading "Object" above. This class of students, who take only the two years of military training however, do receive valuable military training that qualifies them if they so elect to be non-commissioned officers in the State National Guard.

This unit has been awarded the honor of being named as one of the distinguished colleges of the United States for the years 1923-24, 1924-25, and 1925-26.

During the past year the department suffered the loss of Major George T. Everett, U. S. A., retired, who was relieved from active duty on May 20th. Under the policies promulgated by Major Everett the department has shown marked improvement. Adequate equipment has been provided, efforts to obtain better uniforms for the students has been made, and the policy of instruction has been to encourage and develop personal responsibility, integrity, and leadership. These policies have been continued since Major Everett left.

In view of the large number of students who are enrolled in the department, it is believed that the policy of making the hours of practical instruction the basis around which academic hours are arranged, is a logical arrangement. This allotment of hours has been in effect for a number of years and has proven its value, and it is therefore recommended that morning hours be continued for the drill.

I do not believe that this report would be complete without reference to the cooperation and help that has been offered and given by the faculty and students to the Military Department. The student body as a whole, has taken much interest in the work and done its work most satisfactorily. It is believed that the attitude has contributed materially in placing the military instruction at this institution on a superior plane to that in many other institutions. It is my belief, founded upon expressions from the student body, that there has been a development and increase in the interest and support of the students in college towards military training. With such cooperation the work of the personnel of the department has been a pleasure.

Respectfully submitted,

W. P. SCOBEX,

Capt. Inf., DOL., P.M.S.&T.

Feed, Fertilizer and Lime Inspection Service

The Feed, Fertilizer and Lime Inspection Service, a branch of the chemical department of the university, is authorized to enforce the State Regulatory Statutes controlling the purity and truthful labelling of all feeds, fertilizers and limes that are offered or exposed for sale in Maryland. The specific laws involved are the Feed Stuff Law of Maryland, in effect June 1, 1920; the Fertilizer Law of Maryland, in effect June 1, 1922; and the Lime Inspection Law of Maryland, in effect June 1, 1912.

For the purpose of this report it has been deemed advisable to classify the information under the general sub-heading of the industries controlled.

FEED

In order to more clearly bring to the reader's attention the activities of the Department, the following table has been prepared in which the records have been grouped according to the calendar year.

CONDENSED STATEMENT OF ACTIVITIES

	1924	1925	1926
Samples Collected by Inspectors.....	1,226	1,242	1,472
Samples Forwarded by Residents.....	240	248	210
Licenses Issued	1,069	1,261	1,455
Receipts	\$20,640	\$20,280	\$25,780
Prosecutions Instigated (Federal).....	59	32	19
Prosecutions Instigated (State).....	6	11	8
Rebates Secured for Residents.....	\$520	\$480	\$348

From the above it may be noted that the number of samples collected by our representatives is increasing each year. This increase is attributed to the enlargement of local manufacturing plants, closer inspection, and an increase in the use of proprietary mixed feeds by agricultural interests. Many local dealers who previously sold the brands of out-of-state manufacturers are now utilizing their own by-products in compounding mixtures and placing same upon the market.

We examine annually a large number of samples for residents of the State. This constitutes a useful public service, for which the University is the recipient of much favorable comment.

Licenses issued for the sale of Commercial Feeds in Maryland have increased slowly each of the past three years. Intensive inspection, or the discovery of sales that have not been licensed by manufacturers, accounts for the major part of this increase. Naturally,

an increase in the licenses issued would automatically carry an increase in revenue.

While we consider the laws that we enforce corrective rather than punitive, we are compelled at certain times to resort to the courts for proper action when constructive criticisms are ignored. We are glad to note that violators of our Feed Law are gradually being convinced that more time and thought should be exercised in formulating guaranties and also that it is the best policy for all concerned to satisfy legal requirements before placing their products upon the market.

FERTILIZER

Following the procedure used in reporting activities of the Feed Industry, the following table has been prepared showing the results of fertilizer inspection activities for the past three years.

CONDENSED STATEMENT OF ACTIVITIES

	1924	1925	1926
Samples Collected by Inspectors ..	1,129	1,074	1,163
Samples Forwarded by Residents..	92	180	108
Licenses Issued.....	913	989	1,030
Receipts	\$18,742.59	\$19,360.89	\$20,816.27
Rebates Secured for Residents..	\$437.00	\$535.00	\$265.00

The above data indicates a gradual increase in samples secured by our inspectors. It may also be noted that the number of brands offered for sale each year by the manufacturers is also increasing. During the past several years there have been seven new fertilizer companies starting in business in Maryland. This new business takes care of a certain part of the increase noted in the number of brands licensed.

The State Fertilizer Law requires this Department to analyze gratuitously samples that are forwarded by residents of the State, provided certain procedure is followed. These examinations, together with the results of official samples, have resulted in manufacturers making certain financial rebates to consumers. We are glad to acknowledge that the great majority of fertilizer manufacturers are making every effort to produce legitimate products and to honestly inform the public as to their character.

LIME

The inspection activities as pertaining to the Lime Industry show but very little adulteration from year to year. All results obtained in this work are grouped below for the reader's convenience.

CONDENSED STATEMENT OF ACTIVITIES

	1924	1925	1926
Samples Collected by Inspectors..	92	90	111
Samples Forwarded by Residents ..	24	32	47
Licenses Issued.....	58	69	83
Receipts	\$900	\$1,140	\$1,170
Legal Adjustments.....	3	4	3

Attention is called to the increase in the number of samples taken annually by State representatives. This clearly indicates that the demand for agricultural liming materials is increasing. This increase may be attributed in part to the educational campaigns conducted by both State and Federal agricultural organizations, and in part to the promotional work of commercial concerns interested in the manufacture and distribution of land limes.

Very few deficiencies are found in agricultural liming products.

PUBLICATIONS

The Inspection Service annually publishes five bulletins which contain in detail a report of the examination of products taken by our inspectors from shipments in intrastate commerce. This information is of distinct value to consumers in that it affords means for an intelligent selection of purchases.

GENERAL SUMMARY

The period covered in this report has been one of extraordinary development in the various industries regulated, and of steady improvement in effective regulatory activities. The progress noted in control measures has been due principally to three factors.

First, the gradual transfer of the manufacture of products from the farm to the factory. Before the advent of feed legislation much of the feed consumed was produced on the farm or in its immediate neighborhood, so that consumers knew where and how it was made, and usually of what it was composed. As the manufacture of these products were transferred to the factory and were shipped longer and longer distances, it became increasingly difficult for consumers to have much information about the products they bought. Up to the present time few buyers have had any personal knowledge of the methods of production, manufacturing and handling of the goods they buy, and the larger proportion of feeds now used on the farm is purchased from the feed dealer.

Second, advances in the science of Chemistry, Bacteriology, and Microscopy have enabled the control official to detect with a greater degree of certainty, various forms of adulteration and misbranding. Naturally this will work both ways. It has also placed in the hands of the manufacturer tools for the more effective control of his methods of manufacture.

Third, the strict enforcement of present legislation, the interpretation of such legislation by court decisions, and the education of the Industry by various control officials, have all been potent factors in making law enforcement more effective. The educational work has been both in the nature of informing the manufacturers of the requirements of the various laws, and also in assisting the industries to

improve their processes, thus producing better products and only those which comply with the provisions of the laws.

The viewpoint of the leaders of the various industries with which we are associated has changed with the progress in law enforcement activities. When this work was first undertaken there were many who vigorously opposed our endeavors, believing that it would harass trade and result in little or no benefit. There were others who were not exactly hostile, but looked upon it more as a necessary evil than as desirable from their point of view. A few leaders in the various industries had vision to see, from the first, that such legislation, if properly enforced, would be of constructive benefit, as well as a protection to the public. With few exceptions, these leaders look upon control departments as of very great benefit to their business. They have found that we have been able to assist in many practical ways in improving their processes and their products. Their attention has been directed to the need of effective factory control and they have found such control of very great value, not only in meeting the requirements of the laws, but also in improving their products and in effecting more economical production. Probably the greatest benefit that has come to the various industries through efficient law enforcement has been the increased confidence of consumers in the purity and honest labeling of the feed, fertilizer and lime supply of Maryland.

METHOD OF OPERATION

The volume and value of the feed, fertilizer and lime which enter intra-state commerce in Maryland is enormous. To supervise this traffic effectively with a force which is necessarily limited, requires a systematic plan of operation. We have decided to confine our activities in those directions where past experience has indicated that the greatest amount of disturbance may be found. There are certain products which by reason of their peculiar adaptability for adulteration or misbranding, or their high market value, offer particularly fertile fields for sophistication. We believe that the great majority of people doing business in the industries are marketing products in entire conformity with the State laws. Practically all business men are honest and try to do the right thing, and realize it does not pay to misbrand products. We, therefore, keep under constant surveillance those products which offer fertile fields for sophistication, as outlined above, and the products which are marketed by that small per cent of manufacturers who have a tendency towards violation of the requirements of the law are soon found.

The Eastern Branch of the University of Maryland

To the President of the University:

The work of the Eastern Branch of the University of Maryland has been carried on for the period noted with considerable success. The Eastern Branch of the University is located at Princess Anne and is devoted entirely to education of Negroes.

The faculty consists of eleven men and six women. The work of the school includes the scholastic subjects, and in addition for men, agriculture, horticulture, animal husbandry, poultrycraft, woodworking, ironworking and printing. For women, household economy, including cooking, sewing and simple dressmaking.

The enrollment for the triennium is as follows:

	Men	Women	Total
1923-1924	86	109	195
1924-1925	69	92	161
1925-1926	62	58	120

All students enrolled are required to pursue some industrial subject in addition to the scholastic subjects of the course. Decreased enrollment due to loss of building by fire two years ago.

The standard crops for this region, wheat, corn, oats and rye, have all increased in yield from twenty to fifty per cent. Tomatoes, soy beans and hay have also increased in yield.

The land has been improved by tile drainage. Three acres of experimental plots have been cultivated under the direct supervision of the faculty of the University of Maryland.

The orchards have been improved and market gardening is being developed. The part of the campus not devoted to cropping has been greatly improved in appearance.

Percheron horses, Guernsey cows, Berkshire hogs of selected grade, many of them registered, are carried by the farm. The fowls have been increased in number to about 350 old birds and 500 young ones. The department has been improved by the building of extra houses and runs and the purchase of new incubators. A real incubator building is one of the pressing needs.

The work in blacksmithing is particularly directed to the upkeep and repair of the tools and equipment on the grounds. A group of students is taught not only to do the simple work of blacksmithing but to make repairs to all farm equipment and aid in the care of the

heating plant of the school. About \$2,000 worth of work has been done in this way by the department.

The greater part of the work in the wood-working department is expended on repairs to buildings and furniture. Simple furniture is also constructed for the needs of the school. The department takes care of all painting of buildings, inside and out, and does such interior decorating as may be needed. Fifty students have been enrolled in the department during the past three years and it is estimated that \$5,000 in work has been done.

The printing department does the printing for the school and also runs a small job press for outside work. Forty-five students have been enrolled during the three years.

Thorough courses in cooking, the study of food values, etc., is taught to the girls during the course. Domestic art is also taught, and the young women before graduation make their own clothes. They are taught the mending and remaking of old garments as well as new work. Both machine and hand work is employed. Those who complete this course find ready employment either in schools or in some of the best families of the land.

The destruction by fire in February, 1924, of one of the large buildings led to an emergency appropriation of \$40,000 by the Maryland Legislature for the erection of a suitable building. Morgan College, the owner of the land, donated the site and the building was erected under the direction of the Board of Regents of the University of Maryland. This building was occupied in June, 1926, and is a very helpful addition to the facilities of the school.

The building furnishes an assembly hall and administration offices on the first floor, class rooms on the second floor, and dormitory accommodations for boys on the third floor. It is hoped that this last use of the building will be but temporary.

Other improvements have been made through the various industrial departments as already indicated.

The high school course has been standardized. Two years of college work have been added to the course, and the work has been carried on for one year with a class of four students. These four students, all men, have been performing certain school duties in a practical way as a part of the course.

Steps have been taken to work out a home gardening plan to produce such vegetables, dairy products and meat supplies as may be needed and consumed on the grounds.

The items submitted under the head of the Budget will show the pressing needs of the Eastern Branch. I particularly wish to emphasize the pressing need of three things:

- (1) An adequate teaching force to maintain a junior college of high grade. This will involve the employment of foremen and teachers to carry the laboratory method to the farm and shops.

(2) Increased housing facilities for animals and poultry. Also greenhouses to carry on plant propagation for the entire year intensively and enable us to produce early vegetables for the market. Improved dairy animals and equipment is also vital.

(3) Increased facilities for laboratory work, especially during the winter, and for domestic science and art the entire year.

The Eastern Branch should also conduct a first-class summer school for the improvement of the rural teachers of Maryland and the surrounding States.

Respectfully submitted,

J. O. SPENCER,

President,

Eastern Branch of the University.

Financial Report, College Park Schools

To the President of the University:

Sir:

I have the honor to submit herewith in the following pages a detailed statement of the financial operations of those branches of the University located at College Park and Princess Anne for the triennium ended September 30, 1926.

Respectfully submitted,

MAUDE F. MCKENNEY,
Financial Secretary.

INDEX TO FINANCIAL REPORT OF THE UNIVERSITY OF MARYLAND FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

	Table No.
Balance Sheet.....	I
Consolidated Statement of Receipts and Expenditures.....	II
Reconciliation of Cash Balances with Depositories and Cash on Hand.....	III
Statement of Receipts and Expenditures by Funds.....	IV
Detailed Statement of Receipts by Years.....	V
Detailed Statement of Expenditures by Departments Shown by Years.....	VI
Classification of Expenditures by Years.....	VII
Summary of Inventory of Plant.....	VIII
Details of Inventory of Land, Buildings and Equipment.....	IX
Inventory of Supplies.....	X

TABLE I
UNIVERSITY OF MARYLAND BALANCE SHEET
As of September 30, 1926
COLLEGE PARK AND PRINCESS ANNE, ONLY
ASSETS

Current:

Cash on hand and in banks, and in State Treasury Account	\$156,419.60
--	--------------

Inventories:

Departmental Inventories—General University	\$18,697.54
Experiment Station	5,490.97
Extension Service	3,766.35
Eastern Branch	60.00
Saleable Stock—Dairy Manufacturing Lab.	7,979.70
“ “ Students’ Supply Store.....	5,284.50
“ “ University Press.....	778.26
	42,057.32

Accounts Receivable:

Students’ Accounts	\$15,214.00
Federal Smith-Hughes Reimbursement	2,338.54
State Roads Commission Reimbursement.....	875.00
Advanced Registry Testing.....	385.48
Students’ Supply Store.....	441.29
Dairy Manufacturing Laboratory	4,460.64
University Press.....	1,212.34
	24,927.38

Unearned Insurance	10,775.29
--------------------------	-----------

Building Funds:

Balance in Bank.....	\$33,661.29
Balance of Appropriations in State Treasury	180,000.00
Uncompleted Buildings:	
Dormitory—Princess Anne	39,136.62
Dining Hall—College Park	112,864.46
Chemistry Building—College Park.....	34,337.63
	400,000.00

Capital Assets:

Land—College Park and Princess Anne.....	\$104,400.00
Buildings “ “ “ “ “	1,033,420.88
Equipment “ “ “ “ “	435,705.42
	1,573,526.30

Total Assets.....	\$2,207,705.89
-------------------	----------------

TABLE I—Continued

LIABILITIES

Accounts Payable.....	\$11,879.99	
Unexpended Balances in U. S. Funds:		
General University.....	\$30,024.63	
Experiment Station.....	761.74	
Extension Service.....	21,714.67	
Eastern Branch.....	7,745.02	
	<hr/>	60,246.06
State Working Fund.....		200,000.00
Reserve for Uncompleted Buildings.....		400,000.00
	<hr/>	
Total Liabilities.....		672,126.05
		<hr/>
Capital Surplus—September 30, 1926.....	\$1,535,579.84	
Capital Investments as of September 30, 1923, \$1,184,554.42		
Additions for Triennium:		
New Buildings—Dairy Manufacturing Laboratory.....	111,300.00	
Gymnasium—Armory—		
Stadium.....	162,559.96	
Equipment.....	115,111.92	
	<hr/>	\$1,573,526.30
Inventories of Supplies and Stock.....	42,057.32	
Accounts Receivable.....	24,927.38	
Unearned Insurance.....	10,775.29	
Building Construction Funds.....	400,000.00	
Maintenance Surplus.....	156,419.60	
	<hr/>	\$2,207,705.89
Deductions:		
Unexpended U. S. Funds.....	\$60,246.06	
Accounts Payable.....	11,879.99	
State Working Fund.....	200,000.00	
Reserve for Uncompleted Buildings.....	400,000.00	
	<hr/>	672,126.05
	<hr/>	\$1,535,579.84

TABLE II

UNIVERSITY OF MARYLAND—COLLEGE PARK AND PRINCESS ANNE

SUMMARY OF RECEIPTS AND EXPENDITURES FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

	1923-1924	Expenditures 1924-1925	1925-1926	1923-1924	Receipts 1924-1925	1925-1926	Total Expenditures	Total Receipts	Balances, Sept. 30, 1926— Debit Balance	Credit Balance
GENERAL UNIVERSITY:										
Balance Oct. 1, 1923				\$6,483.62						
Receipts (Table 5-A)				\$671,915.75	\$805,982.74	\$969,259.28		\$2,453,641.39		
Expenditures (Table 6-A)	\$689,253.02	\$774,732.10	\$861,574.64				\$2,325,559.76			
Balance Sept. 30, 1926 (Table 2)										\$128,081.63
Totals, General University	\$689,253.02	\$774,732.10	\$861,574.64	\$678,399.37	\$805,982.74	\$969,259.28	\$2,325,559.76	\$2,453,641.39		\$128,081.63
EASTERN BRANCH:										
Balance Oct. 1, 1923				\$229.04						
Receipts (Table 5-B)				27,665.04	28,706.27	37,409.59		\$94,009.94		
Expenditures (Table 6-B)	\$27,878.34	\$28,246.67	\$30,186.41				\$86,311.42			
Balance Sept. 30, 1926 (Table 2)										\$7,698.52
Totals, Eastern Branch	\$27,878.34	\$28,246.67	\$30,186.41	\$27,894.08	\$28,706.27	\$37,409.59	\$86,311.42	\$94,009.94		\$7,698.52
EXPERIMENT STATION:										
Balance Oct. 1, 1923				\$1,054.10						
Receipts (Table 5-C)				141,552.35	\$141,988.84	\$163,799.69		\$448,394.98		
Expenditures (Table 6-C)	\$140,892.59	\$140,190.64	\$169,082.29				\$450,165.52			
Balance Sept. 30, 1926 (Table 2)									\$1,770.54	
Totals, Experiment Station	\$140,892.59	\$140,190.64	\$169,082.29	\$142,606.45	\$141,988.84	\$163,799.69	\$450,165.52	\$448,394.98	\$1,770.54	
EXTENSION SERVICE:										
Balance Oct. 1, 1923				\$22,651.57						
Receipts (Table 5-D)				189,700.03	\$216,941.34	\$223,601.60		\$652,894.54		
Expenditures (Table 6-D)	\$193,036.14	\$215,195.18	\$222,253.23				\$630,484.55			
Balance Sept. 30, 1926 (Table 2)										\$22,409.99
Totals, Extension Service	\$193,036.14	\$215,195.18	\$222,253.23	\$212,351.60	\$216,941.34	\$223,601.60	\$630,484.55	\$652,894.54		\$22,409.99
Grand Totals—All Funds	\$1,051,060.09	\$1,158,364.59	\$1,283,096.57	\$1,061,251.50	\$1,193,619.19*	\$1,394,070.16†	\$3,492,521.25	\$3,648,940.85‡ 3,492,521.25	\$1,770.54	\$158,190.14 1,770.54
Net cash balance Sept. 30, 1926								\$156,419.60		\$156,419.60

* Includes \$75,000 advanced by State for Working Fund.

† Includes \$125,000

‡ Includes \$200,000

TABLE III

RECONCILIATION OF CASH BALANCES WITH DEPOSITORIES
AND CASH ON HAND SEPTEMBER 30, 1926

Total Receipts for Triennium.....	\$3,448,940.85	
Advanced from State Treasurer for Working Fund.....	200,000.00	
		<hr/>
	\$3,648,940.85	
Total Expenditures for Triennium.....	3,492,521.25	
		<hr/>
Cash Balance September 30, 1926.....	\$156,419.60	
Cash on Hand.....	\$2,328.78	
Balance in First National Bank of Hyattsville	4,470.10	
Balance in Citizens National Bank of Laurel..	12,218.87	
Balance in Bank of Ridgely.....	688.63	
Balance in Union Trust Co. of Maryland.....	20,235.07	
Balance in State Treasurer's Account.....	116,478.15	
		<hr/>
	\$156,419.60	

TABLE IV

STATEMENT OF GENERAL UNIVERSITY ACADEMIC AND REVOLVING FUNDS
FOR THE TRIENNium ENDED SEPTEMBER 30, 1926

	Expenditures for Triennium ^o	Receipts for Triennium [†]	Overdraft Sept. 30, 1926	Credit Balance Sept. 30, 1926
General University—State Appropriation.....	\$688,197.14	\$688,197.14		
General University—Receipts.....	1,089,069.90	971,609.07	\$117,460.83	\$30,024.63
“ U. S. Appro. Morrill Fund.....	127,475.49	157,500.12		
“ U. S. Appro. Smith-Hughes.....	29,313.73	26,981.19	2,338.54	
“ U. S. Veterans' Bureau.....	43,272.62	43,272.62		
Total Educational Funds.....	\$1,977,334.88	\$1,887,560.14	\$119,799.37	\$30,024.63
Revolving Funds:				
Students' Supply Store.....	87,219.13 }	105,737.43 }		13,018.30
Transfer to Educational Funds.....	5,500.00 }	19,963.35 }	5,018.08	
University Press.....	24,981.43	22,127.44	800.97	
University Storehouse.....	22,928.41	19,762.11		304.61
Advanced Registry Testing.....	19,457.50	128,411.64		3,252.77
Dairy Manufacturing Laboratory.....	125,158.87			
Total Revolving Funds.....	\$285,245.34	\$296,001.97	\$5,819.05	\$16,575.68
Board of Regents—Building Fund:				
Transfer on account of work done at College Park.....	22,984.66	22,984.66		
State Board of Agriculture:				
Executive Expenses—State Appro.....	15,000.00	15,000.00		
State Dairymen's Association:				
For Cooperative work with University—State Appro.....	15,000.00	15,000.00		
Athletic Association:				
For Collection and Transfer of Fees.....	50,200.00	51,465.74		1,265.74
Gifts for Equipment of New Chemistry Building.....		5,834.00		5,834.00
Mining Extension:				
For Mining Instructor—State Appro.....	4,200.00	4,200.00		
For State Treasurer for Working Fund.....		200,000.00		200,000.00
Grand Totals—General University.....	\$2,369,964.88	\$2,498,046.51	\$125,618.42	\$253,700.05
		2,369,964.88		125,618.42
Net Cash Balance—Sept. 30, 1926.....		\$128,081.63		\$128,081.63

* Includes overdrafts October 1, 1923. See Table No. 5 for details.

† Includes credit balances October 1, 1923. See Table No. 5 for details.

TABLE IV—Continued

STATEMENT OF EASTERN BRANCH—RECEIPTS AND EXPENDITURES FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

EASTERN BRANCH—STATE FUND:			Overdraft Sept. 30, 1926	Credit Balance Sept. 30, 1926
Receipts:	Expenditures for Triennium	Receipts for Triennium		
From State Appropriations.....		\$54,360.00		
Expenditures:				
For Salaries and Wages.....	\$24,344.22			
For Supplies and other Expenses.....	30,015.78			
Totals—State Fund.....	\$54,360.00	\$54,360.00		
EASTERN BRANCH—FEDERAL FUND:				
Receipts:				
Balance Oct. 1, 1923.....		\$190.03		
From U. S. Appropriation.....		37,500.00		
Expenditures:				
For Salaries and Wages.....	\$29,940.01			
For Supplies and other Expenses.....	5.00			
Balance Sept. 30, 1926.....				\$7,745.02
Totals—Federal Funds.....	\$29,945.01	\$37,690.03		\$7,745.02
EASTERN BRANCH—RECEIPT FUND:				
Receipts:				
Balance Oct. 1, 1923.....		\$39.01		
Receipts from Student Fees.....		798.00		
Receipts from Misc. Sources.....		1,122.90		
Expenditures:				
For Salaries and Wages.....	\$549.99			
For Supplies and other Expenses.....	1,411.42		\$46.50	
Overdraft Sept. 30, 1926.....				
Totals—Receipt Funds.....	\$2,006.41	\$1,959.91	\$46.50	
Grand Totals—Eastern Branch.....	\$86,311.42	\$94,009.94	\$46.50	\$7,745.02
		86,311.42		46.50
Net Credit Balance—Sept. 30, 1926.....		\$7,698.52		\$7,698.52

TABLE IV—Continued

STATEMENT OF EXPERIMENT STATION FUNDS
FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

STATE FUND (FOR RESEARCH):			
Receipts:	Expenditures for Triennium	Receipts for Triennium	Overdraft Sept. 30, 1926
From State Appropriation.....		\$197,700.00	Credit Balance Sept. 30, 1926
From Credit by Cancelled Check.....		62.60	
Expenditures:			
For Salaries and Wages.....	\$120,761.50		
For Supplies and other Expenses.....	77,001.10		
Totals—State Fund.....	\$197,762.60	\$197,762.60	
BIOLOGICAL LABORATORY:			
Receipts:			
Balance Oct. 1, 1923.....		\$2,473.48	
From State Appropriation.....		16,500.00	
From Sales of Serum.....		15,843.84	
From Live Stock Sanitary Service.....		2,500.00	
Expenditures:			
For Salaries and Wages.....	\$22,206.33		
For Supplies and other Expenses.....	17,272.92		
Overdraft Sept. 30, 1926.....		\$2,161.93	
Totals—Biological Laboratory.....	\$39,479.25	\$37,317.32	\$2,161.93
SEED INSPECTION:			
Receipts:			
From State Appropriation.....		\$24,600.00	
Expenditures:			
For Salaries and Wages.....	\$20,600.00		
For Supplies and other Expenses.....	4,000.00		
Totals—Seed Inspection.....	\$24,600.00	\$24,600.00	

TABLE IV—Continued

STATEMENT OF EXPERIMENT STATION FUNDS—Continued
FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

			Overdraft Sept. 30, 1926	Credit Balance Sept. 30, 1926
STATION FARM:				
Receipts:				
From Sales and Misc. Sources		\$49,560.94		
Expenditures:				
Overdraft Oct. 1, 1923		\$2,147.59		
For Salaries and Wages		30,654.50		
For Supplies and other Expenses		18,727.34		
Overdraft Sept. 30, 1926			\$1,968.49	
Totals—Station Farm		\$51,529.43	\$49,560.94	\$1,968.49
HATCH FUND:				
Receipts:				
Balance Oct. 1, 1923			\$132.57	
From U. S. Appropriation			45,000.00	
Expenditures:				
For Salaries and Wages		\$44,752.98		
For Supplies and other Expenses		256.33		
Balance Sept. 30, 1926				\$123.26
Totals—Hatch Fund		\$45,009.31	\$45,132.57	\$123.26
ADAMS FUND:				
Receipts:				
Balance Oct. 1, 1923			\$573.01	
From U. S. Appropriation			45,000.00	
Expenditures:				
For Salaries and Wages		\$42,364.86		
For Supplies and other Expenses		3,018.49		
Balance Sept. 30, 1926				\$189.66
Totals—Adams Fund		\$45,383.35	\$45,573.01	\$189.66

TABLE IV—Continued

STATEMENT OF EXPERIMENT STATION FUNDS—Continued
FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

	Expenditures for Triennium	Receipts for Triennium	Overdraft Sept. 30, 1926	Credit Balance Sept. 30, 1926
PURNELL FUND:				
Receipts:				
From U. S. Appropriation.....		\$27,500.00		
Expenditures:				
For Salaries and Wages.....	\$18,658.27			
For Supplies and other Expenses.....	8,392.91			\$448.82
Balance Sept. 30, 1926.....				
Totals—Purnell Fund.....	\$27,051.18	\$27,500.00		\$448.82
FELLOWSHIP FUND:				
(Carried in Station Farm Fund until 1925-1926)				
Receipts:				
From Allotments for Research Fellowships.....		\$3,413.47		
Expenditures:				
For Fellowship Salaries.....	\$1,979.83			
For Supplies and other Expenses.....	473.21			\$960.43
Balance Sept. 30, 1926.....				
Totals—Fellowship Fund.....	\$2,453.04	\$3,413.47		\$960.43
JAMES TODD TRUST FUND:				
Receipts:				
Donation for Animal Research.....		\$3,189.31		
Expenditures:				
For Salaries and Wages.....	\$1,354.16			
For Supplies and other Expenses.....	1,550.13			\$285.02
Balance Sept. 30, 1926.....				
Totals—James Todd Trust Fund.....	\$2,904.29	\$3,189.31		\$285.02

TABLE IV—Continued
STATEMENT OF EXPERIMENT STATION FUNDS—Continued
FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

RIDGELY FARM FUND:

Receipts:

Balance Oct. 1, 1923.....			
From State Appropriation.....	\$22.63		
From Sales and Misc. Sources.....	15,000.00		
	1,546.28		

Expenditures:

For Salaries and Wages.....			
For Supplies and other Expenses.....			
Balance Sept. 30, 1926.....			\$352.69

Totals—Ridgely Farm.....

\$16,568.91

Grand Totals—Experiment Station.....

\$450,618.13

Net overdraft Sept. 30, 1926.....

\$1,770.54

Overdraft
Sept. 30,
1926

Overdraft
Sept. 30,
1926

Credit Balance
Sept. 30,
1926

TABLE IV—Continued
STATEMENT OF EXTENSION SERVICE FUNDS
FOR THE TRIENNIUM ENDED SEPTEMBER 30, 1926

	Expenditures for Triennium	Receipts for Triennium	Overdraft Sept. 30, 1926	Credit Balance Sept. 30, 1926
STATE SMITH-LEVER FUND:				
Receipts:				
From State Appropriation.....				
Expenditures:		\$138,861.33		
For Salaries and Wages.....	\$105,600.00			
For Supplies and Expenses.....	33,261.33			
Totals—State Smith-Lever.....	<u>\$138,861.33</u>	<u>\$138,861.33</u>		
STATE HORTICULTURAL DEPARTMENT:				
Receipts:				
From State Appropriation.....		\$33,120.00		
Expenditures:				
For Salaries and Wages.....	\$21,500.00			
For Supplies and other Expenses.....	11,620.00			
Totals—State Horticultural Department.....	<u>\$33,120.00</u>	<u>\$33,120.00</u>		
GENERAL EXTENSION:				
Receipts:				
Balance Oct. 1, 1923.....		\$764.82		
From State Appropriation.....		45,000.00		
From Misc. Sources.....		12,502.03		
From Board of Public Works for New York Exhibit.....		2,500.00		
Expenditures:				
For Salaries and Wages.....	\$22,667.62			
For Supplies and other Expenses.....	34,656.72			
For New York Exhibit.....	2,496.16			
Balance Sept. 30, 1926.....				\$946.35
Totals—General Extension.....	<u>\$59,820.50</u>	<u>\$60,766.85</u>		<u>\$946.35</u>

TABLE IV—Continued
STATEMENT OF EXTENSION SERVICE FUNDS—Continued
FOR THE TRIENNium ENDED SEPTEMBER 30, 1926

				Overdraft, Sept. 30, 1926	Credit Balance Sept. 30, 1926
COUNTY DEMONSTRATION:					
Receipts:					
From State Appropriation			\$148,000.00		
Expenditures:					
For Salaries and Wages		\$118,000.00			
For Traveling Expenses		30,000.00			
Totals—County Demonstration		\$148,000.00			
MARKETING EXTENSION:					
Receipts:					
From State Appropriation			\$20,000.00		
Expenditures:					
For Salaries and Wages		\$14,000.00			
For Supplies and other Expenses		6,000.00			
Totals—Marketing Extension		\$20,000.00			
FEDERAL SMITH-LEVER:					
Receipts:					
Balance October 1, 1923			\$15,579.09		
From U. S. Appropriation			168,861.33		
Expenditures:					
For Salaries and Wages		\$144,820.35			
For Supplies and other Expenses		20,765.19			
Balance Sept. 30, 1926					\$18,854.88
Totals—Federal Smith-Lever		\$165,585.54	\$184,440.42		\$18,854.88

STATEMENT OF EXTENSION SERVICE FUNDS—Continued
FOR THE TRIENNium ENDED SEPTEMBER 30, 1926

Receipts:

Balance Oct. 1, 1923	\$6,307.66
From U. S. Treasurer	44,029.20
Expenditures:	
For Salaries and Wages	\$47,477.07
Balance Sept. 30, 1926	
Totals—Federal Smith-Lever Supplementary	\$50,336.86
	\$2,859.79
	\$2,859.79

Receipts:

From Inspection Fees.....	\$17,369.08
Expenditures:	
For Salaries and Wages.....	\$13,642.98
For Supplies and Travel.....	3,977.13
Overdraft Sept. 30, 1926.....	\$251.03
Totals—Marketing Inspection.....	\$17,620.11
Grand Totals—Extension Service Funds.....	\$630,484.55
	\$652,894.54
	\$251.03
	\$22,661.02
	\$251.03
Net credit balance Sept. 30, 1926.....	\$22,409.99

TABLE V
UNIVERSITY OF MARYLAND
STATEMENT OF RECEIPTS FOR THE TRIENNium, 1923-1926
COLLEGE PARK AND PRINCESS ANNE

	1923 1924	1924 1925	1925 1926	Total Receipts Triennium
GENERAL UNIVERSITY—A				
Cash Balance Oct. 1, 1923—net	\$6,483.62			\$6,483.62
From State Treasurer:				
For Maintenance	213,310.45*	227,195.45	227,195.45	667,701.35
For Deficiency in Interest	2,047.44	2,047.44	2,047.44	6,142.32
For Interest on Land Grant Funds	4,784.49	4,784.49	4,784.49	14,353.47
	<u>\$220,142.38</u>	<u>\$234,027.38</u>	<u>\$234,027.38</u>	<u>\$688,197.14</u>
From U. S. Treasurer:				
Morrill-Nelson Fund	\$40,000.00	\$40,000.00	\$40,000.00	\$120,000.00
Smith-Hughes Fund	8,279.59	9,027.69	9,673.91	26,981.19
	<u>\$48,279.59</u>	<u>\$49,027.69</u>	<u>\$49,673.91</u>	<u>\$146,981.19</u>
From Student Fees:				
College Students	\$208,730.86	\$221,258.18	\$259,526.92	\$689,515.96
Veterans' Bureau—2-year students	31,289.63	11,682.99	300.00	43,272.62
Summer School Students	17,653.26	19,226.00	19,909.33	56,788.59
Short Course Students	195.00	320.00	441.50	956.50
	<u>\$257,868.75</u>	<u>\$252,487.17</u>	<u>\$280,177.75</u>	<u>\$790,533.67</u>
From Fertilizer, Lime and Feed Licenses and Tonnage Fees	\$40,264.59	\$40,798.89	\$47,766.27	\$128,829.75

TABLE V—Continued
UNIVERSITY OF MARYLAND
STATEMENT OF RECEIPTS FOR THE TRIENNium, 1923-1926
COLLEGE PARK AND PRINCESS ANNE

	1923 1924	1924 1925	1925 1926	Total Receipts Triennium
From Miscellaneous Sources:				
Dining Hall Sales	\$7,720.28	\$8,267.14	\$10,653.23	\$26,640.65
College Greenhouse and Gardens	1,304.13	1,839.66	1,387.82	4,551.61
Library Sales and Transfers	834.14	776.88	1,099.42	2,710.44
Music Festival Ticket Sales	543.75	387.00	240.00	1,170.75
Rent of Goddard House	168.17	189.01	140.16	497.34
Interest on Deposits	176.07	388.58	1,040.89	1,605.54
Fees for Cashing Checks	294.40	321.90	346.50	962.80
Interest on Berman Bonds			25.52	25.52
Credit by Cancelled Checks	259.65		93.92	353.57
Court Costs—Simpson Case			735.01	735.01
Barber Shop Commissions	132.39	193.70	164.19	490.28
Sale of Old Equipment	123.60	1,138.60	412.08	1,674.28
Payment of Fire Losses	645.57		133.43	779.00
Military Uniforms	815.88	1,089.00	852.00	2,756.88
Military Shoe Fund		417.50	199.38	616.88
Summer School Moving Picture	38.20	85.06		123.26
Fees for Electric Iron	15.23			15.23
Miscellaneous Receipts	174.58	177.66	134.15	486.39
Group Insurance Premiums			2,291.27	2,291.27
Personal Telephone Calls	359.50	298.28	334.44	992.22
Fees Animal Pathology Laboratory	945.27	812.05	10.24	1,767.56
Reimbursements:				
From Baltimore Schools for Pro-rated Salaries and Travel	\$8,923.94	\$14,963.64	\$31,937.75	\$55,825.33
From Chemical Foundation for Salaries		4,875.00	7,500.00	12,375.00
From State Roads Commission for Salaries	1,750.00	2,187.50	875.00	4,812.50
From Extension Service for Overhead	2,000.00	3,500.00	2,500.00	8,000.00
From U. S. Industrial Chemical Co. for Fellowship		450.00	750.00	1,200.00
From State Board of Agri. for Auto Insurance			32.86	32.86

TABLE V—Continued
UNIVERSITY OF MARYLAND
STATEMENT OF RECEIPTS FOR THE TRIENNium, 1923-1926
COLLEGE PARK AND PRINCESS ANNE

	1923 1924	1924 1925	1925 1926	Total Receipts Triennium
Refunds:				
From General Service Depts.:				
For Ice to other Depts.	828.45	929.00	623.34	2,380.79
For Coal to other Depts.		2,273.53	1,070.43	3,343.96
For Material and Labor for other Depts.	1,158.94	551.57	577.30	2,287.81
For Freight and Express	42.02	94.04	357.10	493.16
For Gasoline, Oil and Truck Service	708.99	838.68	435.96	1,983.63
For Electricity and Gas		564.36	1,718.97	2,283.33
For Water		169.88	366.07	535.95
For Miscellaneous Supplies	45.80		22.59	68.39
From Hospital—for Extra Service	25.00			25.00
From Insurance Rebates		24.44	33.07	57.51
From Unused Mileage	73.97			73.97
Total Operating Income	\$603,146.85	\$624,164.79	\$680,739.40	\$1,908,051.04
From Revolving Funds:				
Students' Supply Store	\$28,621.79	\$32,590.32	\$36,895.98	\$98,108.09
University Press	6,503.12	5,152.87	8,307.36	19,963.35
University Storehouse	8,018.55	6,562.80	7,546.09	22,127.44
Advanced Registry Testing	6,103.97	7,088.86	6,569.28	19,762.11
Dairy Mfg. Laboratory		42,323.10	86,046.88	128,369.98
Totals Revolving Funds	\$49,247.43	\$93,717.95	\$145,365.59	\$288,330.97
From Board of Regents Building Fund:				
Reimbursement for Work Done at College Park	\$16,005.09	\$1,000.00	\$220.29	\$17,225.38
From Donations for Equipment for New Chemistry Laboratories			5,834.00	5,834.00

TABLE V—Continued

UNIVERSITY OF MARYLAND

STATEMENT OF RECEIPTS FOR THE TRIENNIUM, 1923-1926

COLLEGE PARK AND PRINCESS ANNE

	1923 1924	1924 1925	1925 1926	Total Receipts Triennium
From State Treasurer:				
For Working Fund		\$75,000.00	\$125,000.00	\$200,000.00
Totals—General Educational	\$668,399.37	\$793,882.74	\$957,159.28	\$2,419,441.39
State Board of Agriculture:				
Executive Expenses	\$5,000.00	\$5,000.00	\$5,000.00	\$15,000.00
State Dairymen's Association:				
For Educational Work	\$5,000.00	\$5,000.00	\$5,000.00	\$15,000.00
Mining Extension:				
For Instructor in Mining		2,100.00	2,100.00	4,200.00
Grand Totals—General University	\$678,399.37	\$805,982.74	\$969,259.28	\$2,453,641.39
EASTERN BRANCH—B				
Balance Oct. 1, 1923	\$229.04			\$229.04
State Appropriation	18,120.00	\$18,120.00	\$18,120.00	54,360.00
U. S. Appropriation	9,500.00	10,500.00	17,500.00	37,500.00
Miscellaneous Receipts	45.04	86.27	991.59	1,122.90
Student Fees			798.00	798.00
Totals—Eastern Branch	\$27,894.08	\$28,706.27	\$37,409.59	\$94,009.94

TABLE V—Continued

UNIVERSITY OF MARYLAND

STATEMENT OF RECEIPTS FOR THE TRIENNIUM, 1923-1926

COLLEGE PARK AND PRINCESS ANNE

EXPERIMENT STATION—C

	1923 1924	1924 1925	1925 1926	Total Receipts Triennium
Net Balance Oct. 1, 1923.....	\$1,054.10			\$1,054.10
State Fund—State Appropriation.....	63,962.60†	\$66,900.00	\$66,900.00	197,762.60
Biological Laboratory—State Appropriation.....	5,500.00	5,500.00	5,500.00	16,500.00
Seed Inspection—State Appropriation.....	8,200.00	8,200.00	8,200.00	24,600.00
Ridgely Farm—State Appropriation.....	5,000.00	5,000.00	5,000.00	15,000.00
Hatch Fund—U. S. Appropriation.....	15,000.00	15,000.00	15,000.00	45,000.00
Adams Fund—U. S. Appropriation.....	15,000.00	15,000.00	15,000.00	45,000.00
Purnell Fund—U. S. Appropriation.....		5,000.00	22,500.00	27,500.00
Biol. Laboratory—Sales of Serum.....	6,182.79	4,951.43	4,634.06	15,768.28
Biol. Laboratory—Transfer from St. Bd. Agri.....	2,500.00			2,500.00
Station Farm—Sales and Misc. Receipts.....	17,498.64	14,751.21	17,311.09	49,560.94
Ridgely Farm—Sales and Misc. Receipts.....	632.76	686.20	227.32	1,546.28
James Todd Trust Fund, Donation for Animal Research.....	2,075.56	1,000.00	113.75	3,189.31
Fellowship Fund—Soil Improvement.....	carried in Station		1,320.86	3,413.47
Fellowship Fund—Texas Gulf Sulphur	Farm Account		1,309.27	
Fellowship Fund—Gelfand Mfg. Co.	until 1925-1926		583.34	
Total—Experiment Station.....	\$142,606.45	\$141,988.84	\$163,799.69	\$448,394.98

TABLE V—Continued
UNIVERSITY OF MARYLAND
STATEMENT OF RECEIPTS FOR THE TRIENNium, 1923-1926
COLLEGE PARK AND PRINCESS ANNE

EXTENSION SERVICE—D

	1923 1924	1924 1925	1925 1926	Total Receipts Triennium
Balance Oct. 1, 1923	\$22,651.57			\$22,651.57
State Smith-Lever—State Appropriation	46,287.11	\$46,287.11		138,861.33
General Extension—State Appropriation	15,000.00	15,000.00		45,000.00
State Horticulture—State Appropriation	8,000.00	12,560.00		33,120.00
County Demonstration—State Appropriation	48,000.00	50,000.00		148,000.00
Marketing Extension—State Appropriation		10,000.00		20,000.00
Fed. Smith-Lever—U. S. Appropriation	56,287.11	56,287.11		168,861.33
Special Extension—U. S. Appropriation	14,676.40	14,676.40		44,029.20
General Extension—Misc. Receipts	1,059.38	3,164.52		12,502.03
Marketing Inspection—Misc. Receipts	390.03	6,466.20		17,369.08
Board of Public Works for N. Y. Exhibit		2,500.00		2,500.00
Totals—Extension Service	\$212,351.60	\$216,941.34	\$223,601.60	\$652,894.54
Summary:				
A—General University Receipts	\$678,399.37	\$805,982.74	\$969,259.28	\$2,453,641.39
B—Eastern Branch Receipts	27,894.08	28,706.27	37,409.59	94,009.94
C—Experiment Station Receipts	142,606.45	141,988.84	163,799.69	448,394.98
D—Extension Service Receipts	212,351.60	216,941.34	223,601.60	652,894.54
Grand Totals—Receipts for College Park and Princess Anne	\$1,061,251.50	\$1,193,619.19	\$1,394,070.16	\$3,648,940.85

* Total appropriation, \$227,195.45 (\$13,885.00 donated to Baltimore Schools).

† Total appropriation, 66,900.00 (\$ 3,000.00 donated to Baltimore Schools).

TABLE VI
STATEMENT OF EXPENDITURES BY DEPARTMENTS—TRIENNium, 1923-1926

	1923-1924			1924-1925			1925-1926			Total Expenditures Triennium
	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	
GENERAL UNIVERSITY—A										
Administration:										
Offices of President, Assistant to President, Business and Cash- ier's Offices	\$30,597.70	\$2,357.71	\$32,955.41	\$30,539.97	\$1,747.60	\$32,287.57	\$31,463.30	\$2,941.69	\$34,404.99	\$99,647.97
Registrar:										
Office of the Registrar	5,759.80	841.95	6,601.75	5,760.00	868.73	6,628.73	5,885.00	629.52	6,514.52	19,745.00
Dean of Women:										
Office of the Dean of Women	669.90	78.96	748.86	1,142.97	410.19	1,553.16	2,219.53	262.96	2,482.49	4,784.51
The Library:										
Office and Library	3,347.69	2,288.98	5,636.67	3,890.83	4,357.96	8,248.79	6,268.52	4,300.20	10,568.72	24,454.18
Publications:										
Printing and Distribution of Pub- lications	2,298.95	9,875.11	12,174.06	2,964.40	8,659.42	11,623.82	3,546.46	5,852.28	9,398.74	33,196.62
General Service:										
Dept. of Buildings and Grounds	17,968.45	27,798.24	45,766.69	19,651.06	33,165.53	52,816.59	20,622.01	35,425.50	56,047.51	154,630.79
Janitorial Department	8,544.83	1,296.76	9,841.59	9,467.67	1,684.71	11,152.38	10,820.54	1,736.21	12,556.75	33,550.72
Heating Plant	7,968.93	13,491.59	21,460.52	9,738.31	16,077.26	25,815.57	10,568.67	13,938.35	24,507.02	71,783.11
Miscellaneous Expense					1,649.95	1,649.95		2,243.82	2,243.82	3,893.77
Purchasing, Mail and Transportation:										
Purchasing Office, Post Office, Freight and Express, Bus Service and Military Stores	9,096.46	1,936.39	11,032.85	9,249.95	1,937.30	11,187.25	9,598.75	3,033.47	12,632.22	34,852.32
Miscellaneous General Expense:										
Travel for General University		647.93	647.93		254.98	254.98		386.42	386.42	1,289.33
Fire Insurance		3,158.22	3,158.22		6,884.23	6,884.23		365.51	365.51	10,407.96
Group Life and Accident Insurance		433.63	433.63		532.83	532.83		3,764.37	3,764.37	4,730.83
Interest on Loans		1,717.16	1,717.16		2,191.83	2,191.83		1,047.38	1,047.38	4,956.37
Association Dues and Premiums on Bonds		601.50	601.50		677.50	677.50		625.00	625.00	1,904.00
General Postage		1,812.14	1,812.14		834.67	834.67		720.00	720.00	3,366.81
Entertainment of Guests		245.00	245.00		687.31	687.31		563.65	563.65	1,495.96
Commencement Day		749.53	749.53		1,079.89	1,079.89		1,059.98	1,059.98	2,889.40
Farmers' Day								1,847.74	1,847.74	1,847.74
General University Music								1,778.01	1,778.01	1,778.01
Young Men's Christian Association				354.11	206.11	560.22		500.00	500.00	1,060.22
Miscellaneous Expenses		1,788.36	1,788.36		248.41	248.41		291.25	291.25	2,322.02
Total—General Expense	\$86,252.71	\$71,119.16	\$157,371.87	\$92,759.27	\$84,150.41	\$176,909.68	\$100,992.78	\$83,313.31	\$184,306.09	\$518,587.64



TABLE VI—Continued

STATEMENT OF EXPENDITURES BY DEPARTMENTS—TRIENNium, 1923-1926

	1923-1924			1924-1925			1925-1926			Total Expenditures Triennium
	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	
Forward—General Expense	\$86,252.71	\$71,119.16	\$157,371.87	\$92,759.27	\$84,150.41	\$176,909.68	\$100,992.78	\$83,313.31	\$184,306.09	\$518,587.64
General Educational Departments:										
College of Agriculture	\$75,938.16	\$8,937.62	\$84,875.78	\$74,220.87	\$11,467.53	\$85,688.40	\$76,719.96	\$9,210.10	\$85,930.06	\$256,494.24
College of Arts and Sciences	116,096.47	17,577.88	133,674.35	125,448.82	18,018.00	143,466.82	158,929.95	16,593.32	175,523.27	452,664.44
College of Education	23,293.51	1,633.89	24,927.40	21,128.85	2,116.88	27,097.17	25,696.01	2,085.51	27,781.52	79,806.09
Mining Extension				3,851.44						
College of Engineering	32,983.78	1,630.43	34,614.21	33,746.98	1,500.28	35,247.26	36,096.65	2,611.99	42,548.64	112,410.11
Mining Extension							3,840.00			
College of Home Economics	8,687.18	494.97	9,182.15	8,270.67	851.34	9,122.01	7,446.50	814.57	8,261.07	26,565.23
Military Science and Tactics	3,827.35	1,160.42	4,987.77	3,565.80	2,135.68	5,701.48	3,880.91	1,604.84	5,485.75	16,175.00
Physical Education:										
For Men	6,188.06	987.67	7,175.73	5,150.00	169.31	5,319.31	5,300.00	407.25	5,707.25	18,202.29
For Women	2,250.00	133.61	2,383.61	2,800.00	210.83	3,010.83	2,818.17	275.10	3,093.27	8,487.71
Graduate School	6,405.45	508.02	6,913.47	6,422.22	415.41	6,837.63	6,561.12	311.29	6,872.41	20,623.51
Summer School	5,150.00	267.22	5,417.22	5,623.26	607.83	6,231.09	6,915.00	431.46	7,346.46	18,994.77
U. S. Veterans' Bureau	15,569.90	4,781.93	20,351.83	3,399.98	2,400.64	5,800.62				26,152.45
Total Instructional Departments	\$296,389.86	\$38,113.66	\$334,503.52	\$293,628.89	\$39,893.73	\$333,522.62	\$334,204.27	\$34,345.43	\$368,549.70	\$1,036,575.84
Service and Health:										
The Dining Hall	\$23,016.62	\$63,783.42	\$86,800.04	\$24,076.98	\$95,599.15	\$119,676.13	\$26,254.03	\$94,205.11	\$120,459.14	\$326,935.31
The Laundry	5,149.23	563.03	5,712.26	5,150.39	345.83	5,496.22	5,378.32	297.12	5,675.44	16,883.92
The Hospital	2,680.00	222.39	2,902.39	2,706.60	223.29	2,929.89	3,655.60	362.37	4,017.97	9,850.25
Total—Service and Health	\$30,845.85	\$64,568.84	\$95,414.69	\$31,933.97	\$96,168.27	\$128,102.24	\$35,287.95	\$94,864.60	\$130,152.55	\$353,669.48
Totals—General Educational Depts.	\$413,488.42	\$173,801.66	\$587,290.08	\$418,322.13	\$220,212.41	\$638,534.54	\$470,485.00	\$212,523.34	\$683,008.34	\$1,908,832.96

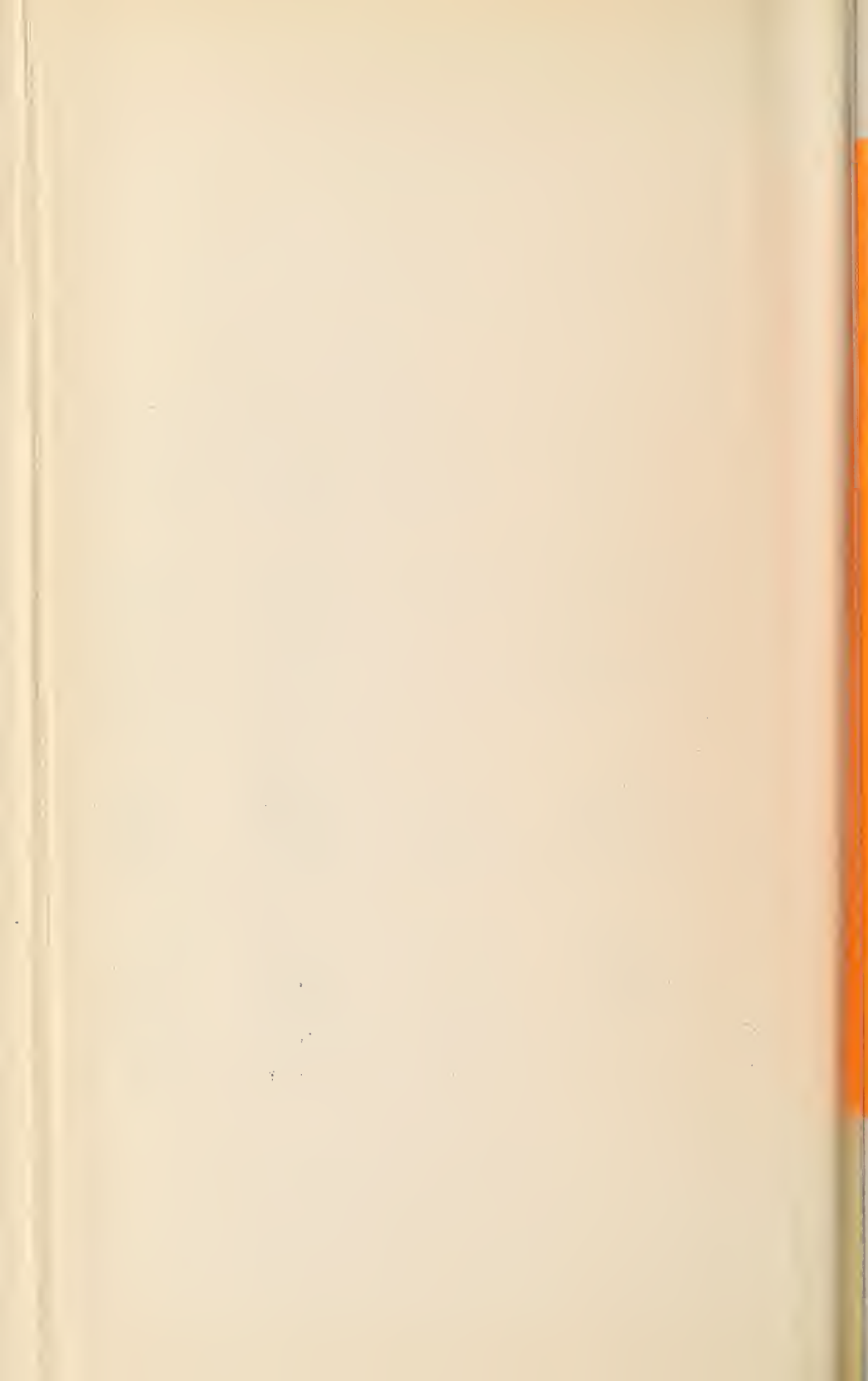


TABLE VI—Continued

STATEMENT OF EXPENDITURES BY DEPARTMENTS—TRIENNium, 1923-1926

	—1923-1924—			—1924-1925—			—1925-1926—			Total Expenditures Triennium
	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	
Forward										
General Educational Depts.	\$413,488.42	\$173,801.66	\$587,290.08	\$418,322.13	\$220,212.41	\$638,534.54	\$470,485.00	\$212,523.34	\$683,008.34	\$1,908,832.96
Revolving Funds:										
Dairy Manufacturing Laboratory		.....		\$4,577.87	\$35,867.24	\$40,445.11	\$9,305.81	\$75,407.95	\$84,713.76	\$125,158.87
Student Supply Store	\$3,470.00	\$22,611.74	\$26,081.74	3,750.00	24,087.70	27,837.70	4,150.00	29,139.19	33,289.19	87,208.63
University Press	3,259.12	2,833.01	6,092.13	3,004.90	7,816.25	10,821.15	3,305.43	3,693.80	6,999.23	23,912.51
Advanced Registry Testing	..	6,194.07	6,194.07		6,582.19	6,582.19	.....	6,506.49	6,506.49	19,282.75
University Storehouse	.....	7,257.09	7,257.09		6,636.30	6,636.30	..	8,578.56	8,578.56	22,471.95
Total—Revolving Funds	\$6,729.12	\$38,895.91	\$45,625.03	\$11,332.77	\$80,989.68	\$92,322.45	\$16,761.24	\$123,325.99	\$140,087.23	\$278,034.71
Miscellaneous:										
Student Refunds	.....	\$11,735.02	\$11,735.02		\$10,491.13	\$10,491.13		7,134.07	7,134.07	29,360.22
State Board of Agriculture Executive Expenses	\$3,400.00	1,600.00	5,000.00	\$3,400.00	1,600.00	5,000.00	3,400.00	1,600.00	5,000.00	15,000.00
State Dairymen's Association	810.00	4,190.00	5,000.00	1,500.00	3,500.00	5,000.00	2,000.00	3,000.00	5,000.00	15,000.00
Board of Regents—Building Fund	324.61	21,303.28	21,627.89							21,627.89
Totals for Salaries, Wages and Miscellaneous Expenses	\$424,752.15	\$251,525.87	\$676,278.02	\$434,554.90	\$316,793.22	\$751,348.12	\$492,646.24	\$347,583.40	\$840,229.64	\$2,267,855.78
Transfer of Morrill Fund To Princess Anne								7,500.00	7,500.00	7,500.00
Transfer of Fees Collected for Athletic Board		12,975.00	12,975.00		23,380.00	23,380.00		13,845.00	13,845.00	50,200.00
Correction of Entries					3.98	3.98				3.98
Total Expenditures:										
General University Funds	\$424,752.15	\$264,500.87	\$689,253.02	\$434,554.90	\$340,177.20	\$774,732.10	\$492,646.24	\$368,928.40	\$861,574.64	\$2,325,559.76



TABLE VI—Continued

STATEMENT OF EXPENDITURES BY DEPARTMENTS—TRIENNium, 1923-1926

	1923-1924			1924-1925			1925-1926			Total Expenditures Triennium
	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	Salaries and Wages	Supplies and Other Expenses	Total for Department	
Forward—General University	\$424,752.15	\$264,500.87	\$689,253.02	\$434,554.90	\$340,177.20	\$774,732.10	\$492,646.24	\$368,928.40	\$861,574.64	\$2,325,559.76
EASTERN BRANCH—B										
State Fund	\$9,045.01	\$9,074.99	\$18,120.00	\$8,319.21	\$9,800.79	\$18,120.00	\$6,980.00	\$11,140.00	\$18,120.00	\$54,360.00
Federal Fund	9,758.34		9,758.34	10,126.67		10,126.67	10,055.00	5.00	10,060.00	29,945.01
Receipt Fund							594.99	1,411.42	2,006.41	2,006.41
Totals—Eastern Branch	\$18,803.35	\$9,074.99	\$27,878.34	\$18,445.88	\$9,800.79	\$28,246.67	\$17,629.99	\$12,556.42	\$30,186.41	\$86,311.42
EXPERIMENT STATION—C										
State Fund	\$40,000.00	\$23,962.60	\$63,962.60	\$40,761.50	\$26,138.50	\$66,900.00	\$40,000.00	\$26,900.00	\$66,900.00	\$197,762.60
Biological Laboratory	6,865.53	8,678.60	15,544.13	7,255.80	3,959.20	11,215.00	8,085.00	4,635.12	12,720.12	39,479.25
Seed Inspection	7,000.00	1,200.00	8,200.00	8,200.00	1,400.00	9,600.00	8,000.00	1,400.00	9,400.00	24,600.00
Station Farm	8,185.13	8,940.19	17,125.32	11,560.02	3,838.45	15,418.47	10,909.35	5,928.70	16,838.05	49,381.84
Hatch Fund	14,985.28	90.00	15,075.28	14,367.01	132.26	14,499.27	15,400.69	34.07	15,434.76	45,009.31
Adams Fund	14,400.00	978.02	15,378.02	14,138.15	893.49	15,031.64	13,826.71	1,146.98	14,973.69	45,383.35
Purnell Fund				1,380.79	371.72	1,752.51	17,277.48	8,021.19	25,298.67	27,051.18
Fellowship Fund							1,979.83	473.21	2,453.04	2,453.04
Jas. Todd Trust Fund	333.33		333.33	1,020.83	751.99	1,772.82		722.58	722.58	2,828.73
Ridgely Farm	2,653.43	2,620.48	5,273.91	4,012.37	1,388.56	5,400.93	3,800.00	1,741.38	5,541.38	16,216.22
Totals—Experiment Station	\$94,422.70	\$46,469.89	\$140,892.59	\$101,296.47	\$38,894.17	\$140,190.64	\$118,079.06	\$51,003.23	\$169,082.29	\$450,165.52
EXTENSION SERVICE—D										
State Smith-Lever	\$35,200.00	\$11,087.11	\$46,287.11	\$35,200.00	\$11,087.11	\$46,287.11	\$35,200.00	\$11,087.11	\$46,287.11	\$138,861.33
State Horticulture	4,900.00	3,100.00	8,000.00	8,300.00	4,260.00	12,560.00	8,300.00	4,260.00	12,560.00	33,120.00
General Extension	6,041.66	10,395.12	16,436.78	8,520.00	9,040.71	17,560.71	8,105.96	15,220.89	23,326.85	57,324.34
County Demonstration	38,000.00	10,000.00	48,000.00	40,000.00	10,000.00	50,000.00	40,000.00	10,000.00	50,000.00	148,000.00
Marketing Extension				7,000.00	3,000.00	10,000.00	7,000.00	3,000.00	10,000.00	20,000.00
Federal Smith-Lever	45,999.20	8,973.80	54,973.00	48,220.03	6,282.10	54,502.13	50,601.12	5,509.29	56,110.41	165,585.54
Special Extension	19,072.00		19,072.00	15,451.96		15,451.96	12,953.11		12,953.11	47,477.07
Marketing Inspection		267.25	267.25	5,253.56	1,083.55	6,337.11	8,389.42	2,626.33	11,015.75	17,620.11
Special New York Exhibit					2,496.16	2,496.16				2,496.16
Total—Extension Service	\$149,212.86	\$43,823.28	\$193,036.14	\$167,945.55	\$47,249.63	\$215,195.18	\$170,549.61	\$51,703.62	\$222,253.23	\$630,484.55
Grand Total—Operating Expenses	\$687,191.06	\$363,869.03	\$1,051,060.09	\$722,242.80	\$436,121.79	\$1,158,364.59	\$798,904.90	\$484,191.67	\$1,283,096.57	\$3,492,521.25

TABLE VII

CLASSIFICATION OF EXPENDITURES FOR THE UNIVERSITY OF MARYLAND—COLLEGE PARK AND PRINCESS ANNE

	1923-1924					1924-1925					1925-1926					Total Expenditures Triennium
	General University A	Eastern Branch B	Experiment Station C	Extension Service D	Total 1923 1924	General University A	Eastern Branch B	Experiment Station C	Extension Service D	Total 1924 1925	General University A	Eastern Branch B	Experiment Station C	Extension Service D	Total 1925 1926	
Operating Expenses:																
For Salaries	\$351,378.83	\$17,023.34	\$71,936.35	\$148,617.93	\$588,956.45	\$360,540.72	\$17,106.67	\$75,236.15	\$161,242.13	\$614,125.67	\$402,004.02	\$17,629.99	\$91,604.16	\$161,565.49	\$672,803.66	\$1,875,885.78
“ Wages	93,430.54	1,780.01	25,221.82	1,418.03	121,850.40	83,910.72	1,339.21	26,185.32	6,703.42	118,138.67	99,180.03	1,963.35	28,071.39	9,516.09	138,730.86	378,719.93
“ Chemicals and Laboratory Supplies	6,601.95		5,144.10		11,746.05	6,158.39	132.19	2,956.61		9,247.19	5,897.91		2,363.92		8,261.83	29,255.07
“ Heat, Light and Power	16,041.80	3,714.46	2,150.73	1,000.00	22,906.99	18,830.66	4,008.36	4,191.91	1,000.00	28,030.93	18,158.00	3,802.14	2,423.01	1,005.25	25,389.40	76,327.32
“ Postage, Stationery and Small Printing	9,761.59	264.99	1,201.63	2,514.92	13,743.13	12,448.61	68.82	1,283.65	3,747.85	17,548.93	10,306.28	183.39	2,012.53	4,795.20	17,297.40	48,589.46
“ Telephone and Telegraph	2,111.15		335.64	922.45	4,369.24	3,468.27		411.75	946.60	4,826.62	3,875.56		43.56	503.15	1,185.56	14,803.69
“ Freight and Express	7,557.30	1,104.60	1,255.08	597.41	10,514.39	8,515.66	1,337.49	1,709.22	1,188.42	12,750.79	9,553.90	1,911.51	1,345.13	1,663.64	14,474.18	37,739.36
“ Meats, Groceries and Laundry Supplies	59,044.50				59,044.50	88,444.31				88,444.31	88,258.72		114.39		88,373.11	235,861.92
“ Seeds, Plants and Sundry Supplies	3,500.38	631.07	2,367.52	710.24	7,209.21	8,183.72	639.49	2,605.39	849.77	12,278.37	11,951.47	1,446.54	5,155.10	705.59	19,258.70	38,746.28
“ Repairs to Motor Vehicles	1,190.25	345.64			1,535.89	1,686.98	191.25			1,878.23	599.11	121.50			720.61	4,134.73
“ Gasoline and Oil	1,901.39	720.51			2,621.90	1,669.15	814.77			2,483.92	1,700.15	710.69			2,410.84	7,516.66
“ Traveling Expenses	11,925.74		2,360.38	32,603.60	46,889.72	9,051.65		2,398.20	32,549.81	43,999.66	9,317.00		5,762.18	37,470.59	52,549.77	143,439.15
“ Fire Insurance	3,591.85		222.68		3,814.53	7,397.06		1,478.61		8,875.67	4,129.88	187.30	85.23		4,402.41	17,092.61
“ Interest on Loans	1,717.16		176.32		1,893.48	5,214.22				5,214.22	1,354.88				1,354.88	8,462.58
“ Rent	1,008.36		680.00		1,688.36	1,023.99		810.00	85.00	1,918.99	950.02		3,030.00	92.00	4,072.02	7,679.37
“ Association Dues and Bonds	601.50		35.00		636.50	778.00		91.00	13.00	882.00	656.00		10.00		666.00	2,184.50
“ Entertainment of Guests				102.74	102.74	808.24				808.24	1,749.23				1,749.23	2,660.21
“ Publications	9,875.11		3,343.80	2,989.86	16,208.77	7,000.50		1,491.75	2,921.98	11,414.23	5,852.28		2,977.96	2,608.75	11,438.99	39,061.99
“ Fertilizers		66.70	1,119.63		1,186.33	460.00	103.11	1,767.22		2,330.33			3,284.23		3,284.23	6,800.89
“ Military Uniforms	1,016.05				1,016.05	1,651.44				1,651.44	987.50				987.50	3,654.99
“ Feeding Stuffs		364.52	8,380.02		8,744.54	816.54	1,160.75	6,234.93		8,212.22	47.00	664.53	6,994.85		7,706.38	24,663.14
“ Cleaning Rugs, Windows, etc.						460.00		55.25	8.55	663.80	704.53	15.00		27.76	747.29	1,411.09
“ Music and Music Festival	1,807.05				1,807.05					460.00	1,020.50				1,020.50	3,287.55
“ Young Men's Christian Assn.						145.81				145.81	500.00				500.00	645.81
“ Refund State Bd. of Agri. a/c error						500.00				500.00					500.00	500.00
“ Miscellaneous Expenses	1,354.05		181.72	15.00	1,550.77	690.47	1.25	19.90	62.00	773.62	1,085.34	15.46	56.84	457.40	1,615.04	3,939.43
“ University of Maryland Film	942.50				942.50											942.50
“ Court Costs—Simpson Case	901.20				901.20											901.20
“ Student Breakage	213.93				213.93											213.93
“ Payment of Loan			2,500.00		2,500.00											2,500.00
Total Operating Expenses	\$588,474.18	\$26,015.84	\$128,612.42	\$191,492.18	\$934,594.62	\$630,455.11	\$26,903.36	\$128,926.86	\$211,318.53	\$997,603.86	\$679,839.31	\$28,810.35	\$155,679.68	\$221,093.32	\$1,085,422.66	\$3,017,621.14

TABLE VII—Continued

CLASSIFICATION OF EXPENDITURES FOR THE UNIVERSITY OF MARYLAND—COLLEGE PARK AND PRINCESS ANNE—Continued

	1923-1924					1924-1925					1925-1926					Total Expenditure - Triennium
	General University A	Eastern Branch B	Experiment Station C	Extension Service D	Total 1923 1924	General University A	Eastern Branch B	Experiment Station C	Extension Service D	Total 1924 1925	General University A	Eastern Branch B	Experiment Station C	Extension Service D	Total 1925 1926	
Total Operating Expenses (Forward)	\$588,474.18	\$26,015.84	\$128,612.42	\$191,492.18	\$934,594.62	\$630,455.11	\$26,903.36	\$128,926.86	\$211,318.53	\$997,603.86	\$679,839.31	\$28,810.35	\$155,679.68	\$221,093.32	\$1,085,422.66	\$3,017,621.14
Capital Outlay:																
For Scientific Apparatus	\$3,767.35	\$370.58	\$2,384.76	\$522.69	\$7,045.38	\$3,375.18		\$1,526.47	\$122.37	\$5,024.02	\$4,952.80		\$1,396.04	\$84.82	\$6,433.66	\$18,503.06
" Furniture and Fixtures	8,992.81	140.65	1,326.59	800.09	11,260.14	10,170.67	\$5.45	637.40	948.02	11,761.54	14,642.91	334.55	1,708.95	723.93	17,410.34	40,432.02
" Tools and Machinery	2,527.66	675.09	2,073.20	64.05	5,340.00	8,236.57	329.66	2,648.04	232.43	11,446.70	1,931.03	342.07	1,551.18	239.91	7,064.19	23,850.89
" Library Books	2,845.78	23.08	400.70	157.13	3,426.69	5,445.48		283.70	77.67	5,806.85	5,136.24		778.90		6,037.22	15,270.76
" Motor Vehicles	5,583.90				5,583.90	4,960.44		860.00		5,820.44	1,312.00	10.83		111.25	1,312.00	12,716.34
" Live Stock		150.00	625.00		775.00	267.50	352.00	75.00		694.50	325.00		2,544.35		2,869.35	4,338.85
" Building Alterations and Repairs	11,666.68	503.10	5,469.92		17,639.70	11,366.21	656.20	5,233.17		17,255.58	8,020.70	688.61	2,423.19		11,132.50	46,027.78
Total—Capital Outlay	\$35,384.18	\$1,862.50	\$12,280.17	\$1,543.96	\$51,070.81	\$43,822.05	\$1,343.31	\$11,263.78	\$1,380.49	\$57,809.63	\$36,320.68	\$1,376.06	\$23,402.61	\$1,159.91	\$52,259.26	\$161,139.70
Revolving Funds:																
Student Supply Store—Stock	22,599.19				22,599.19	23,015.45				23,015.45	29,138.45				29,138.45	74,753.09
University Press—Stock	2,778.48				2,778.48	3,694.68				3,694.68	3,579.99				3,579.99	10,053.15
University Storehouse—Stock	7,257.09				7,257.09	6,570.67				6,570.67	8,626.40				8,626.40	22,454.16
Dairy Manfg. Laboratory—Stock						27,701.54				27,701.54	73,956.79				73,956.79	101,658.33
Total—Revolving Funds—Stock	\$32,634.76				\$32,634.76	\$60,982.34				\$60,982.34	\$115,301.63				\$115,301.63	\$208,918.73
Departmental Transfers	\$2,049.88				\$2,049.88	\$5,597.49				\$5,597.49	\$1,633.95				\$1,633.95	\$9,281.32
Student Refunds	11,735.02				11,735.02	10,491.13				10,491.13	7,134.07				7,134.07	29,360.22
Special Exhibit Fund									\$2,496.16	2,496.16						2,496.16
Transfer of Fees Collected for Athletic Board	12,975.00				12,975.00	23,380.00				23,380.00	13,845.00				13,845.00	50,200.00
Transfer to Balto. Office of Funds Borrowed to Complete Gymnasium Armory	6,000.00				6,000.00											6,000.00
Transfer of Balance to Eastern Branch											7,500.00				7,500.00	7,500.00
Correction of Error						3.98				3.98						3.98
Grand Total	\$689,253.02	\$27,878.34	\$140,892.59	\$193,036.14	\$1,051,060.09	\$774,732.10	\$28,246.67	\$140,190.64	\$215,195.18	\$1,158,364.59	\$861,574.64	\$30,186.41	\$169,082.29	\$222,253.23	\$1,283,096.57	\$3,492,521.25
Summary for Triennium:																
A—General University	\$2,325,559.76															
B—Eastern Branch	86,311.42															
C—Experiment Station	450,165.52															
D—Extension Service	630,484.55															
Total	\$3,492,521.25															

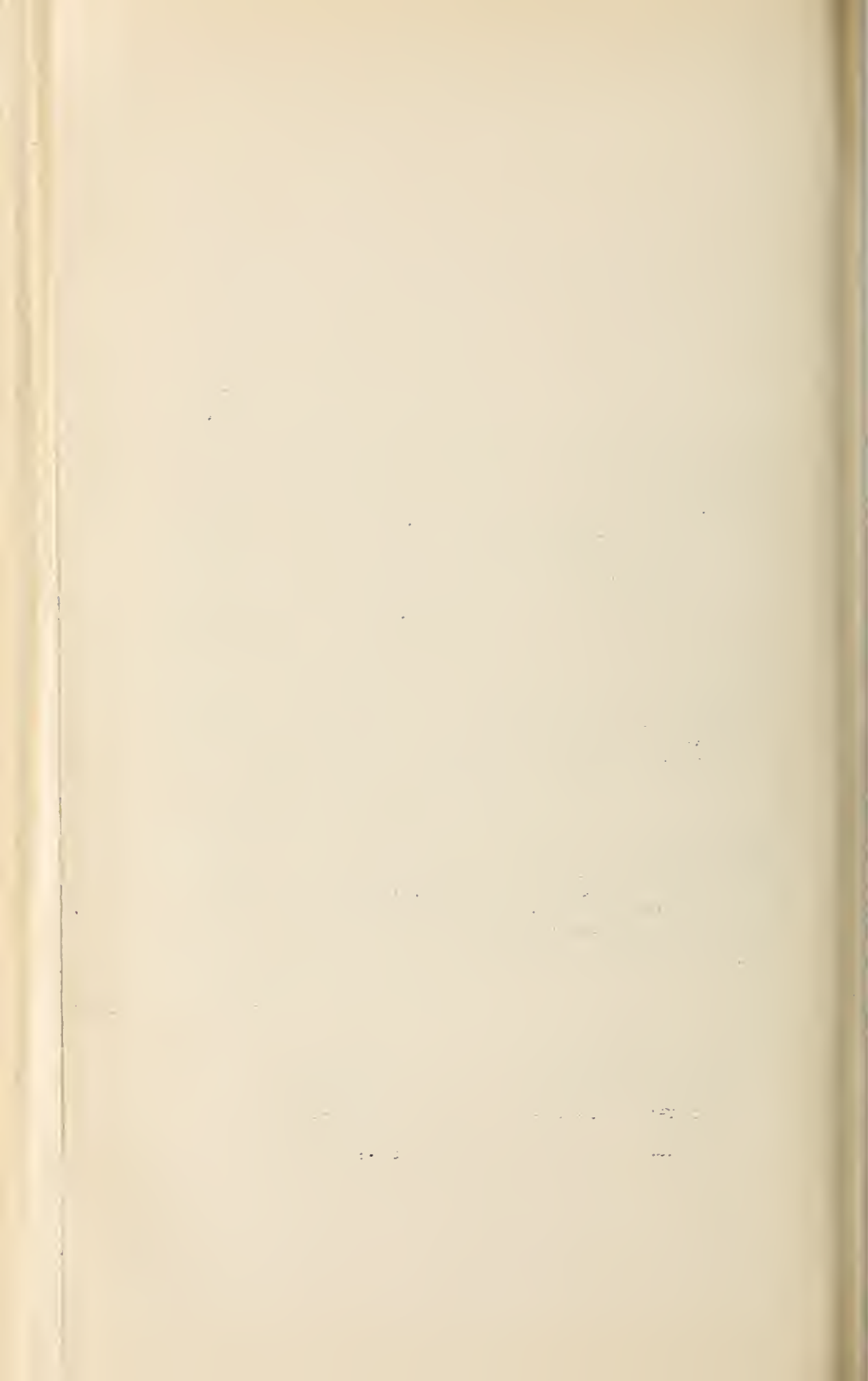


TABLE VIII

SUMMARY OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPTEMBER 30, 1926
(Not Including Baltimore Schools or Hospital)

Land:	General University	Eastern Branch	Experiment Station	Extension Service	Total
College Park—286 acres	\$85,800.00				\$85,800.00
College Park—12 acres			3,600.00		3,600.00
Ridgely—50 acres			6,000.00		6,000.00
Princess Anne—70 acres		9,000.00			9,000.00
Total Land	\$85,800.00	\$9,000.00	\$9,600.00		\$104,400.00
Buildings:					
General University Bldgs.	\$932,359.59				\$932,359.59
Experiment Station, including Ridgely Farm and Tobacco Barn at Upper Marlboro			\$92,998.29		\$92,998.29
Buildings at Princess Anne for Colored Students		\$8,063.00			8,063.00
Total Buildings	\$932,359.59	\$8,063.00	\$92,998.29		\$1,033,420.88
Equipment:					
General University	\$319,413.62				\$319,413.62
Eastern Branch		\$17,822.50			17,822.50
Experiment Station			\$80,340.17		80,340.17
Extension Service				\$18,129.13	18,129.13
Total Equipment	\$319,413.62	\$17,822.50	\$80,340.17	\$18,129.13	\$435,705.42
TOTAL PLANT CAPITAL	\$1,337,573.21	\$34,885.50	\$182,938.46	\$18,129.13	\$1,573,526.30

A Dining Hall and a Chemistry Building at College Park and a Dormitory for Men at Princess Anne are in process of construction, the total appropriation for which is \$400,000.00. When these buildings are completed and the exact cost determined they will be transferred from the Building Construction account to Plant Capital account.

TABLE IX
DETAILS OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPTEMBER 30, 1926

Land:	General University	Eastern Branch	Experiment Station	Extension Service	Total
College Park—286 acres.....	\$85,800.00				\$85,800.00
College Park—12 acres.....			\$3,600.00		3,600.00
Ridgely—50 acres.....			6,000.00		6,000.00
Princess Anne.....		\$9,000.00			9,000.00
Total Land	\$85,800.00	\$9,000.00	\$9,600.00		\$104,400.00
Buildings—College Park:					
Agricultural Building.....	\$198,954.00				
Bake Shop.....	400.00				
Boiler House.....	160.00				
Calvert Hall.....	107,000.00				
Cannery.....	625.00				
Carriage Shed.....	900.00				
Chemistry Building (old).....	18,000.00				
Dining Hall and Kitchen.....	14,000.00				
Engineering Buildings.....	80,000.00				
Gas Machine House.....	300.00				
Girls Dormitory.....	3,000.00				
Gerneaux Hall.....	8,000.00				
Greenhouses—College.....	8,000.00				
Home Economics Practice House.....	25,500.00				
Hospital.....	7,500.00				
Insectary.....	150.00				
Library.....	16,090.00				
Laundry.....	3,000.00				
New Pump House.....	100.00				
Old Pump House.....	1,100.00				
Science Hall and Greenhouse.....	36,775.00				
Tenant House.....	533.00				
Silvester Hall.....	97,000.00				
Storage Shed.....	270.00				
Stable and Garage.....	1,600.00				
Water Tower and Tank.....	4,400.00				
Filtration Plant.....	25,142.63				
Buildings completed since last report:					
Gymnasium, Armory, Stadium.....	162,559.96				
Dairy Manufacturing Laboratory.....	111,300.00				
Total—General University	\$932,359.59				\$932,359.59

TABLE IX—Continued

DETAILS OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPTEMBER 30, 1926

Forward	General University	Eastern Branch	Experiment Station	Extension Service	Total
Buildings:					\$932,359.59
Rosshourg Building			\$11,500.00		
Agronomy Building			3,500.00		
Bacteriology Laboratory			11,200.00		
Seed Storage and Farm Machine Bldg.			1,200.00		
Dairy Building			1,050.00		
Hog House			830.00		
Horticultural Building			8,800.00		
Cow Stable			4,200.00		
Dairy Building, Stable and Implement House					
Hay Barrack			17,300.00		
Silos (3)			2,300.00		
Poultry Feed Houses			1,333.00		
Poultry Houses			400.00		
Poultry Storage House			706.00		
Main Poultry House			300.00		
Barn			2,000.00		
Dwelling—Farm House			260.00		
" Pebble Dash			3,100.00		
" Shingle Roof			1,290.00		
" Concrete Block			1,240.00		
" Frame			2,200.00		
Oxidation Plant			1,100.00		
			8,424.29		
Ridgely Farm:					
Main Buildings—Purchased in 1914			6,000.00		
Tool and Machinery Building			750.00		
Wagon Shed			225.00		
Hog House			80.00		
Chicken House			125.00		
Tenant and Smoke House			585.00		
Upper Marlboro Tobacco Barn			1,000.00		
Total—Experiment Station					\$92,998.29

TABLE IX—Continued
DETAILS OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPTEMBER 30, 1926

Eastern Branch:	General University	Eastern Branch	Experiment Station	Extension Service	Total
Portable Class Room		\$2,250.00			
Barn		2,500.00			
Dwelling		2,000.00			
Six Small Buildings		1,313.00			
Total—Princess Anne					\$8,063.00
Total—Buildings	\$932,359.59	\$8,063.00	\$92,998.29		\$1,033,420.88
Equipment:					
General University—College Park	\$319,413.62				
Eastern Branch—Princess Anne		\$17,822.50			
Experiment Station—College Park			\$80,340.17		
Extension Service—College Park				\$18,129.13	
Total—Equipment	\$319,413.62	\$17,822.50	\$80,340.17	\$18,129.13	\$435,705.42
Grand Total—Land, Buildings and Equipment	\$1,337,573.21	\$34,885.50	\$182,938.46	\$18,129.13	\$1,573,526.30

TABLE X
SUMMARY OF INVENTORY OF SUPPLIES AS OF SEPTEMBER 30, 1926

Department	Totals	Office Supplies and Stat.	Chemicals and Lab'y Supplies	Farm, Garden and Greenhouse	Coal	Building Material	Other Supplies
GENERAL UNIVERSITY:							
President's Offices	\$154.06	\$154.06					
Business Offices	378.00	378.00					
Registrar's Office	602.91	602.91					
Dean of Women	38.10	38.10					
Library	64.96	64.96					
College of Arts and Sciences	4,795.18	727.04	\$4,068.14				
College of Agriculture	1,544.95	65.45	1,096.26	\$150.00		\$233.24	
College of Agr. Greenhouse	542.50			542.50			
Bacteriology and Sanitation	749.20	278.30	470.90				
Engineering, College of	511.18	107.28	148.90		6.00	249.00	
College of Education	80.98	80.98					
College of Home Economics	46.33	46.33					
Military Science	279.45	73.33				206.12	
Graduate School	85.18	85.18					
General Service	6,416.00	30.01			1,246.50	5,063.59	75.90
Purchasing Department	86.67	86.67					
Dining Hall	57.44	57.44					
Dining Hall—Food Supplies	2,264.45						2,264.45
Total—Educational Depts.	\$18,697.54	\$2,876.04	\$5,784.20	\$692.50	\$1,252.50	\$5,751.95	\$2,340.35

TABLE X—Continued
SUMMARY OF INVENTORY OF SUPPLIES AS OF SEPTEMBER 30, 1926

Department	Totals	Office Supplies and Stat.	Chemicals and Lab'ty Supplies	Farm. Garden and Greenhouse	Coal	Building Material	Other Supplies
Earning Departments:							
<i>Dairy Manufacturing Laboratory:</i>							
Finished Goods	\$1,425.15						
Raw Material	2,126.56						
Factory Supplies	5,494.79						
Salesroom Supplies	933.20	7,979.70					\$7,979.70
<i>Student Supply Store:</i>							
Saleable Stock	5,284.50						\$5,284.50
<i>University Press:</i>							
Saleable Stock	778.26						\$778.26
Totals—General University	\$32,740.00	\$2,876.04	\$5,784.20	\$692.50	\$1,252.50	\$5,751.95	\$16,382.81
EASTERN BRANCH							
EXPERIMENT STATION	\$60.00	\$10.00				\$15.00	\$35.00
EXTENSION SERVICE	5,490.97	598.38	\$679.51	\$3,234.00	\$579.08	25.00	375.00
	3,766.35	3,766.35					
Total Inventory—Supplies	\$42,057.32	\$7,250.77	\$6,463.71	\$3,926.50	\$1,831.58	\$5,791.95	\$16,792.81

FINANCIAL REPORT, BALTIMORE SCHOOLS

PREPARED BY GEORGE S. SMARDON, COMPTROLLER

Receipts

School of Medicine	\$147,655.71	
School of Dentistry	243,485.92	
School of Pharmacy	87,730.36	
School of Law	142,241.95	
School of Business Administration	15,417.04	
Total Receipts		\$636,530.98

Expenditures

School of Medicine	\$186,874.11	
School of Dentistry	144,970.67	
School of Pharmacy	59,806.86	
School of Law	62,974.66	
School of Business Administration	38,579.91	
Total Expenditures		\$493,206.21
Surplus		\$143,324.77

Surplus

School of Medicine	*\$39,218.40	
School of Business	*23,162.87	
School of Pharmacy	27,923.50	
School of Law	79,267.29	
School of Business	23,162.87	
Total		\$143,324.77
* Cash Overdrafts.		

NOTE—Surplus shown above contains student fees received in September applicable to 1926-27, amounting to. \$137,262.06

SCHOOL OF MEDICINE

Receipts

Cash 10/1/25		*\$71,002.46
Students' Fees	\$110,949.00	
Obstet. Dept.	1,361.48	
Skeletons	318.00	
Rent Dwellings	409.52	
Sundry Receipts	32.96	
Sale of Old Equipment	2,742.78	
Dis. Vou. Payable	56.67	
Donation Spec. Imp.	1,100.00	
Donation for Equipment	132.38	
J. Friedenwald Fund	255.38	
State Appropriation	42,500.00	
Total Receipts	\$159,858.17	
Loan University Hospital	58,800.00	\$218,658.17
Excess Rec. over Overdraft		\$147,655.71
* Cash Overdraft.		

Expenditures

Salaries	\$93,396.96	
Wages	10,546.06	
Office Supplies	679.67	
Printing	2,945.85	
Repairs to Property	2,597.89	
Drugs and Chemicals	1,931.57	
Laboratory Supplies	3,842.81	
Laboratory Expense	2,935.03	
New Equipment	12,681.88	
Lib. Books and Journals	1,223.25	
Furniture and Fixtures	1,071.23	
Improvements and Renewals	2,566.48	
New Building Plans	200.00	
New Construction	12,188.86	
Real Estate	66.85	
Group Insurance	111.32	
Ground Rent	1,741.56	
Insurance	3,806.25	
Int. Bonds and Mortgages	9,840.00	
Rent. P. & S. Bldg.	13,125.00	
Fuel	562.70	
Janitors' Supplies	377.59	
General Supplies	93.16	
Water Rent	127.24	
Gas and Electric	783.47	
Telephone and Telegraph	623.12	
Postage	761.74	
Advertising	288.39	
Hauling	447.71	
Miscellaneous Expense	800.85	
Association Dues	149.12	
		\$182,513.61
Commencement	\$496.41	
Merc. Trust & Dept.	1,600.00	
Traveling Expense	240.79	
Imprest Fund	479.62	
Taxes on Bond Issue	87.04	
Unpaid Bills 10/1/25	1,456.64	
		\$186,874.11
Total Expenditures		\$186,874.11
Excess Receipts over Overdraft		147,655.71
		\$39,218.40
Overdraft 9/30/26		\$39,218.40
Cash (9/30/26)	\$38,215.74	
Unpaid Bills (9/30/26)	1,002.66	
		\$39,218.40
The expenditures as set forth in this statement include Administrative and Library charges as follows:		
Central Office	\$5,832.67	
Library	1,577.11	
Fees collected in September applicable to 1926-27		\$46,975.38

SCHOOL OF DENTISTRY

Receipts

Cash 10/1/25	\$94,794.51	
Students' Fees	114,900.75	
Infirmary Receipts	26,605.00	
B. C. D. S.	6,314.81	
Sundry Receipts	133.38	
Int. on Deposit	589.13	
Skeletons	60.00	
Dis. Vouchers Payable	88.34	
Total Receipts		\$243,485.92

Expenditures

Salaries	\$75,858.10	
Wages	5,029.44	
Office Supplies	609.91	
Printing	503.51	
Repairs to Property	1,826.09	
Drugs and Chemicals	632.88	
Lab. Supplies	885.66	
Lab. Expense	210.08	
Clin. Supplies	10,044.72	
Clin. Expense	86.34	
Lib. Books and Journals	206.04	
Furniture and Fixtures	1,558.16	
Imp. and Renewals	478.45	
Improvements—6 & 8 S. Greene St.	4,000.00	
New Construction	7,439.64	
New Bldg. Plans	200.00	
Apparatus and Equipment	18,880.61	
Group Insurance	192.46	
Insurance	708.19	
Int. on Mortgage	195.00	
Mortgage Payable	3,750.00	
Fuel	43.14	
Janitors' Supplies	764.19	
Hauling	585.87	
Water Rent	91.54	
Gas and Electric	716.65	
Postage	428.31	
Telephone and Telegraph	322.85	
Advertising	103.95	
Misc. Expense	757.59	
Repairs, Microscope	402.70	
Association Dues	86.12	
Traveling Expense	660.92	
Rent—B. C. D. S.	4,666.67	
Commencement	786.68	
Imprest Fund	179.62	
Unpaid Bills 10/1/25	1,078.59	
Total Expenditures		\$144,970.67
Total Receipts	\$243,485.92	
Total Expenditures	144,970.67	
Surplus 9/30/26		\$98,515.25

Cash Balance	\$99,697.63
Unpaid Bills.	1,182.38

Surplus 9/30/26 \$98,515.25

The expenditures as set forth in this statement include Administrative and Library charges as follows :

Central Office	\$4,669.32
Library	966.80

NOTE—Fees collected in September applicable to 1926-27 \$41,305.00

SCHOOL OF PHARMACY

Receipts

Cash 10/1/25	\$21,720.92
Students' Fees	55,320.25
Sundry Receipts	482.05
Interest on Deposit	176.84
Dis. Vou. Payable	30.30
State Appropriation	10,000.00

Total Receipts \$87,730.36

Expenditures

Salaries	\$38,302.37
Wages	1,368.22
Office Supplies	286.53
Printing	328.11
Repairs to Property	775.65
Drugs and Chemicals	2,356.45
Lab. Supplies	1,383.71
Lab. Expense	253.71
New Equipment	4,513.37
Furniture and Fixtures	458.43
Improvements and Renewals	131.59
Improvements—6 & 8 S. Greene St.	4,000.00
New Building Plans	200.00
Group Insurance	57.17
Insurance	17.37
Mortgage Payable	1,250.00
Interest on Mortgage Payable	105.00
Fuel	431.29
Janitors' Supplies	189.32
General Supplies	10.36
Repairs Microscopes	201.35
Water Rent	25.69
Hauling	138.08
Telephone and Telegraph	285.95
Postage	218.88
Gas and Electric	251.66
Misc. Expense	232.79
Association Dues	110.13
Advertising	118.95
Dup. Diplomas	3.06
Traveling Expense	219.84
Commencement	486.15
Imprest Fund	79.62
Unpaid Bills 10/1/25	437.88
Lib. Books and Journals	578.18

Total Expenditures \$59,806.86

Total Receipts.....	\$87,730.36	
Total Expenditures.....	59,806.86	
Surplus 9/30/26		\$27,923.50
Cash Balance	\$28,094.40	
Unpaid Bills.....	170.90	
Surplus 9/30/26		\$27,923.50
The expenditures as set forth in this statement include Administrative and Library charges as follows:		
Central Office.....	\$3,340.91	
Library	934.00	
NOTE—Fees collected in September applicable to 1926-27		\$16,488.25

SCHOOL OF LAW

Receipts

Cash 10/1/25	\$66,509.61	
Students' Fees	75,194.69	
Sundry Receipts	53.93	
Dis. Vouchers Payable	18.75	
Int. on Deposit	464.97	
Total Receipts.....		\$142,241.95

Expenditures

Salaries	\$52,650.48	
Wages	997.18	
Office Supplies.....	412.50	
Printing	1,030.39	
Repairs to Property.....	585.45	
Library Books and Journals.....	1,115.33	
Furniture and Fixtures.....	1,686.28	
Improvements and Renewals	84.75	
New Building Plans	200.00	
Group Insurance	30.55	
Insurance	21.90	
Fuel	467.87	
Janitors' Supplies	131.42	
General Supplies	12.49	
Hauling	64.77	
Telephone and Telegraph	437.09	
Postage	203.74	
Gas and Electric.....	257.99	
Water Rent.....	5.11	
Advertising	53.95	
Association Dues	36.13	
Commencement	997.06	
Examination Expense	802.00	
Miscellaneous Expense	237.75	
G. H. H. Emory Fund	64.42	
Imprest Fund	29.62	
Unpaid Bills 10/1/25	358.44	
Total Expenditures.....		\$62,974.66

Total Receipts	\$142,241.95	
Total Expenditures	62,974.66	
Surplus		\$79,267.29
Cash Balance 9/30/26	\$79,489.83	
Unpaid Bills 9/30/26	222.54	
Surplus 9/30/26		\$79,267.29
The expenditures as set forth in this statement include Administrative and Library charges as follows:		
Central Office	\$8,657.58	
Library	3,044.15	
NOTE—Fees collected in September applicable to 1926-27		\$32,493.43

SCHOOL OF BUSINESS ADMINISTRATION

Receipts

Cash 10/1/25		*\$8,695.28
Students' Fees	\$24,110.32	
Sundry Receipts	2.00	
Total Receipts		\$24,112.32
Excess Rec. over Overdraft		15,417.04
* Cash Overdraft.		

Expenditures

Salaries	\$31,605.20	
Wages	569.77	
Library Books and Journals	5.00	
Office Supplies	206.63	
Printing	383.73	
Advertising	405.70	
Commencement	350.08	
Telephone and Telegraph	242.80	
Gas and Electric	109.92	
Hauling	6.55	
Postage	126.07	
Furniture and Fixtures	438.82	
Traveling Expenses	113.14	
Miscellaneous Expense	89.28	
Rent	3,278.97	
Repairs to Property	25.45	
Janitors' Supplies	91.87	
Imprest Fund	100.00	
Additional Lect. Rooms	135.00	
General Supplies	15.36	
Association Dues	29.25	
Unpaid Bills 10/1/25	251.32	
Total Expenditures		\$38,579.91
Excess Receipts over Overdraft	\$15,417.04	
Total Expenditures	38,579.91	

Overdraft 9/30/26 \$23,162.87

The expenditures as set forth in this statement include:

Administrative—Expense—Central Office \$2,618.12

TRIENNIAL REPORT
of the
University of Maryland
and
The Maryland State Board of Agriculture



Official Publication of the University of Maryland

Vol. 24

March, 1927

No. 1

Issued monthly by the University of Maryland at College Park, Md., as second-class matter, under Act of Congress of July 16, 1894.



